STANFORD UNIVERSITY LIBRARY
JAN 26 1931

883

AN ECONOMIC STUDY OF RETAIL FEED STORES IN NEW YORK STATE

A THESIS

PRESENTED TO THE FACULTY OF THE GRADUATE SCHOOL OF CORNELL UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

L. C.

BY

EDMOND ADRIAN PERREGAUX

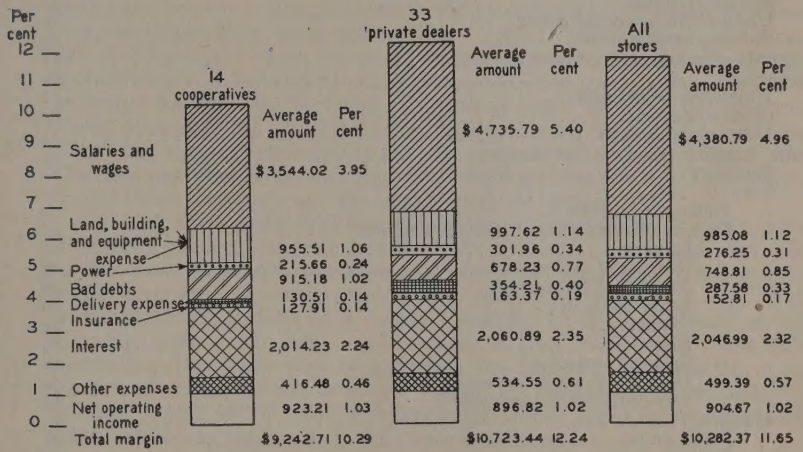
STANFORD UNIVERSITY LIBRARIES
WITHDRAWN

ITHACA, N. Y.
1926

3781
C81P
UNCLASSED

An Economic Study of Retail Feed Stores in New York State

E. A. Perregaux



DISTRIBUTION OF GROSS MARGIN OF COOPERATIVE AND PRIVATE FEED STORES IN NEW YORK STATE, 1924

Published by the
Cornell University
Agricultural Experiment Station
Ithaca, New York

Received for publication January 24, 1928

CONTENTS

PAGE

Type of store studied ... 3
Accounts kept by the stores ... 4
Content of accounts as adjusted ... 6
Form of business organization ... 7
Methods of starting in business ... 7
Management and labor ... 7
  Management ... 7
  Labor ... 8
Capital ... 9
Ratio of current assets to current liabilities ... 15
Land and buildings ... 16
  Value of land and buildings ... 16
  Number of buildings and types of construction ... 16
  Storage facilities ... 17
  Distance from railroad siding ... 19
  Building arrangement ... 19
Methods of unloading feed from the car ... 21
Equipment ... 22
  Warehouse equipment ... 22
  Office equipment ... 24
  Delivery equipment ... 24
Sales, margins, expenses, and income ... 24
  Summary ... 24
  Sales ... 27
    Volume of business ... 27
    Factors affecting sales of individual stores ... 28
      Location ... 28
      Number of customers ... 28
      Number of competitors ... 28
      Advertising ... 29
      Credit ... 29
      Discounts ... 29
      Seasonal variation ... 31
      Day-of-the-month variations ... 32
      Day-of-the-week variations ... 33
  Margins ... 33
    Retail prices ... 33
    Purchase prices ... 35
      Kinds of feed purchased ... 35
      Differences in prices paid by different stores ... 36
      Method of purchase ... 37
      Freight rates ... 39
      Time of purchase ... 39
  Operating expenses ... 42
    Salaries and wages ... 42
    Land, building, and equipment expense ... 43
      Sales per dollar invested in land and buildings ... 44
    Power and equipment expense ... 44
    Other expenses ... 44
    Total operating expense ... 44
  Net operating income ... 45
    Rate of return on capital ... 45
    Rate of return on net worth ... 45
  Factors affecting margins, expenses, and income ... 46
    Volume of business ... 46
    Inventory turnover ... 47
    Capital turnover ... 48
Credit ... 48
  Percentage of credit sales ... 48
  Length of time for which credit is extended ... 48
  Amount of credit carried ... 51
  Seasonal variation in credit ... 51
  Size of accounts ... 52
Summary ... 52
Blanks used for study of retail feed stores ... 54

AN ECONOMIC STUDY OF RETAIL FEED STORES IN NEW YORK STATE [1]

E. A. PERREGAUX

The present method of retail distribution of feed in New York State is of comparatively recent development. Increasing quantities of by-product feeds have become available through the manufacture of human foods and other products from seeds and grains. Greater knowledge of the essentials of a balanced ration for cows, and the tendency toward greater production of milk in fall and winter, have caused an increase in the demand by dairymen for commercial feeds. Improved roads and the use of motor trucks have made it possible for farmers to obtain commercial feeds and other farm supplies more easily from business centers along railroad lines. The disappearance of the old type of gristmill and the advent of the present type of retail feed store are due largely to these factors.

Although some retail feed stores have been in operation for many years, little study has been made of their methods of doing business and practically no standards have been available with which the proprietor of a feed store might compare his own margins and operating expenses. The study herein reported consists of a detailed analysis of business practices and operating costs in the retail feed business in New York State. The chief purposes of the study were to ascertain the expenses of operation in the retail feed trade, to discover the causes of differences in efficiency of different stores, and to provide information which might be useful to individual dealers in the study of their own businesses.

TYPE OF STORE STUDIED

Information regarding sales, margins, operating expenses, financial organization, and other phases of the business, was obtained by personal visits to 70 stores during the year 1925.[2] Of these stores, 20 were cooperative and 50 were operated by private dealers. The cooperative stores included all that were known to have been doing a warehouse feed business in New York State in 1924. They were scattered throughout the State. Most of the privately operated stores studied were located in Chenango, Madison, and Cortland Counties. They were selected by their location and by the willingness of the proprietors to furnish the information.

The locations of the stores are shown in figure 1. For the most part, the stores are situated in fluid-milk-shipping and condensery regions having a relatively small acreage of cash crops. In these regions large quantities of purchased feeds are used, and the feed stores do little business in commodities other than feed. Flour, seed, fertilizer, lime, cement, and roofing are the principal side lines.

[1] Also presented to the Faculty of the Graduate School of Cornell University, July, 1926, as a major thesis in partial fulfillment of the requirements for the degree of doctor of philosophy.

AUTHOR'S ACKNOWLEDGMENTS. The author is greatly indebted to Professor Leland Spencer, under whose supervision this study was conducted, and to Professors Donald English and M. Lyle Holmes, who made valuable criticisms during the preparation of the manuscript. The original data were furnished by seventy retail feed dealers, without whose cooperation this study would not have been possible.

[2] The survey blanks used are shown on pages 54 to 61.

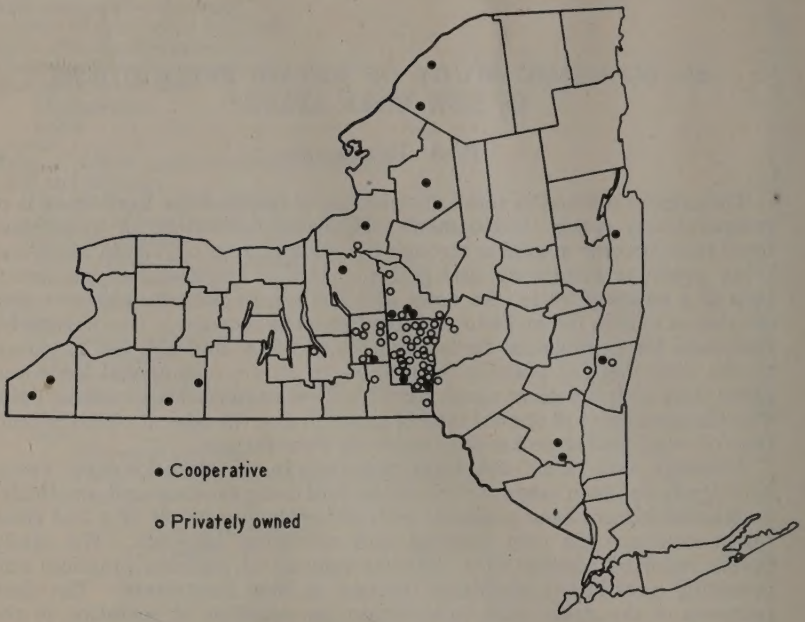


FIGURE 1. LOCATION OF THE 70 RETAIL FEED STORES INCLUDED IN THE STUDY

ACCOUNTS KEPT BY THE STORES

The records obtained cover the business year 1924. The business year for a feed store in a dairy section naturally ends in May or June, when the cows are turned out to pasture. At that time the dealers' stocks of feed are usually lowest and it is easiest to take inventory. However, due to the income-tax reports and the natural tendency to make the accounting period coincide with the calendar year, 57 of the 70 stores ended their accounting period on December 31. For the remaining 13 stores the accounting period ended on various dates between July 31, 1924, and June 30, 1925. The closing dates of the fiscal years and the number of stores using each date were as follows:

January 31	1
February 28	1
March 31	1
May 31	4
June 30	3
July 31	1
September 15	1
November 30	1
December 31	57
Total	70

Great variations were found in the records kept by different stores. Few of the stores visited had complete data on inventories, purchases, sales, and expenses. Most of the individual proprietors and partnerships had given little attention to accounting. The cooperatives and other corporations had more complete bookkeeping systems than did the individual proprietors and the partnerships, but even in these stores the records in many instances were not kept accurately. Only 11 of the 70 stores employed full-time bookkeepers. The necessity for making income-tax reports, however, has stimulated the dealers to keep more complete accounts than they did formerly.

Nearly all of the stores visited had taken an inventory of merchandise at the beginning and at the end of the year. Two stores kept a perpetual inventory whereby it was possible to ascertain at any time the quantities of different kinds of feed and supplies on hand. A considerable number of the stores kept no record of purchases other than a file of the original invoices. Practically all the stores kept records of total sales, but less than half kept a record of cash and credit sales separately. Few stores kept a record of the sales discounts and allowances made to customers, only the net amount of each sale being recorded.

Most of the stores kept a record of the cash expenses, but as a rule no adjustments were made for salary of proprietor, depreciation of buildings and equipment, bad debts, or interest on the capital furnished by the owners.

The usual practice followed in recording sales was to make out sales slips in duplicate, one copy for the customer and the other for the store record. In most cases, space was provided on the sales slip for entering the previous balance of the customer's account. Some stores posted the credit sales to the customers' accounts in a ledger, but more often the slips were simply filed alphabetically in an individual account-receivable file, no further record being made. The latter is a time-saving method, but involves greater risk of losing all record of a customer's account.

Most of the stores kept some record of notes receivable held at the store, but as a rule kept no record of notes discounted at banks. The majority of the stores did not summarize the notes and accounts receivable oftener than once a year.

A simple journal was the usual form of record of receipts and expenditures, although some of the stores used a combined journal and cash book, or a special column record to suit their own needs.

In so far as possible, the figures used in this study were taken directly from the financial records of the stores; but in some cases in which the actual figures were unavailable, it was necessary to use the proprietors' estimates regarding some details, such as percentages of cash and credit sales. In order to make the records of the individual stores comparable, they were adjusted to a standard form, as explained in the following pages.

The varying number of stores included in the statistical tables is explained by the incompleteness of some of the accounting records. It was possible, for example, to make up complete statements of income and expense for only 47 of the 70 stores visited.

CONTENT OF ACCOUNTS AS ADJUSTED

Net Sales are the gross sales, less any allowances or discounts given to customers. Income from grinding or mixing feed is included in the net sales.

Inventories were included in the tabulations as furnished by the stores. The inventories for individual stores were not strictly comparable, since some of the stores used market price at the time of inventory, some cost, and some cost or market, whichever was lower. The last method of computing inventory is preferable because no profits are included until they are actually made, while any losses are taken account of as soon as incurred; but it was not possible to adjust all the inventories to this basis because of lack of data.

Purchases are made up of all goods bought for resale, less any returns or allowances received or any discounts taken. Amounts paid for sacks bought with the goods were included, also amounts paid for freight and carting. Where the store did its own trucking, a part of the delivery expense was transferred to purchases, but the expense for man labor used in hauling was not included, since in such cases the feed was unloaded at the door of the warehouse. In cases in which the warehouse was on a siding, the feed had to be trucked by hand from the car to the warehouse floor.

Cost of Goods Sold was obtained by adding to the inventory, at the beginning, the purchases for the year, and deducting therefrom the inventory at the end of the year.

Gross Margin is the difference between the net sales and the cost of goods sold.

Salaries and Wages includes all amounts paid to hired managers and other employees. The value of the time of owner managers was also included, at the estimated cost of hiring another person to do the same work.

Land, Building, and Equipment Expense is made up of depreciation, insurance, repairs, taxes, and rent, on real estate and equipment except delivery equipment. Interest on the amount invested in building and equipment is not included. Any rent received was credited to this account, and the expense reduced thereby. A separate tabulation, in which interest was included, was made for land and building and power and equipment expenses, to put the stores owning and renting these items on the same basis.

Heat, Light, and Water is mainly an office expense, since most warehouses are not heated and lights are used very little. Water-power expense is not included under water.

Power includes only expenditures for purchased power, or supplies for gasoline or kerosene engines.

Office Supplies include postage, stationery, paper, pencils, sales pads, books, accounting records, and any other items used in the office.

Telephone and Telegraph, Auditing, Advertising, Legal and Collection Expense, Bad Debts, Travel Expense, and Demurrage, are all self-explanatory.

Delivery Expense includes either the expense of hired delivery, or the maintenance expense of delivery equipment except the wages of the delivery force and interest on the investment in delivery equipment.

Other Supplies includes warehouse supplies such as twine, and extra sacks.

Insurance on Merchandise includes insurance on merchandise stored in the warehouse. Some stores vary their insurance with the varying amount of stock at different periods of the year.

Miscellaneous Expense includes corporation taxes and miscellaneous items that could not be classified under other headings.

Interest includes amounts paid for the use of borrowed money, and 6 per cent of the average net worth (capital furnished by the owners).

Total Operating Expense includes all the expenses of operating the business as given above.

Net Operating Income is the difference between the gross margin and the total operating expense.

Net Income is the final income figure obtained by adding to the net operating income any non-operating income received by the business.

FORM OF BUSINESS ORGANIZATION

The 50 private stores were operated by 47 individuals or firms, of which 30 were individual proprietors, 10 were partnerships, and 7 were business corporations (table 1). One firm operated 4 stores.

The 20 cooperative stores were operated by 18 different associations, 3 stores being operated by one of the associations. Of the cooperative associations, 9 were membership corporations, 8 were capital-stock cooperative corporations, and 1 was an ordinary business corporation operated on cooperative principles.

TABLE 1. FORM OF BUSINESS ORGANIZATION, 70 STORES

Form of organization	Number of businesses	Number of stores
Individual proprietor	30	30
Partnership	10	13
Business corporation	8*	8*
Membership cooperative corporation	9	11
Capital-stock cooperative corporation	8	8
Total	65	70

* Includes one cooperative store.

METHODS OF STARTING IN BUSINESS

Most of the private dealers, and nearly half of the cooperative stores, had started in business by buying out previous owners. Most of the other cooperatives had started as purchasing agencies without warehouse facilities. Increasing demands of customers had led to the acquisition of a warehouse.

MANAGEMENT AND LABOR

MANAGEMENT

The average age of the managers or proprietors was forty-six years. The youngest was twenty-eight years of age, and the oldest was seventy-five. Eighty per cent were between the ages of thirty-one and sixty.

All of the 20 managers of cooperative stores had served in this capacity for less than five years. The managers of the private stores, in most cases, had held the position since the business was started. There were 12 managers who had served for more than fifteen years.

The range of managers' salaries is shown in table 2. More than 80 per cent of the salaries were between $1000 and $3000 per year.

TABLE 2. DISTRIBUTION OF 70 STORES ACCORDING TO MANAGER'S SALARY

Range in salary	Number of stores	Per cent of total number
$1,000 or less	5	7.1
$1,001 to $2,000	32	45.7
$2,001 to $3,000	26	37.1
$3,001 to $4,000	5	7.1
$4,001 to $5,000	2	2.9
Total	70	100.0

In stores where the proprietors did not receive regular salaries, the proprietors were asked to estimate what salary would be required to hire some one to do the same work. The averages for the five types of stores are given in table 3. The cooperative stock corporations were lowest, with an average of $1630 per annum, while the partnership stores estimated their average manager's salary at $2610 a year.

TABLE 3. AVERAGE SALARY OF MANAGERS ACCORDING TO FORM OF ORGANIZATION, 47 STORES

Form of organization	Number of stores	Average salary
Cooperative:		
Membership*	8	$2,010
Capital-stock*	5	1,630
Private:		
Individual†	20	2,005
Partnership†	8	2,610
Corporation*	6	2,023
Total	47	$2,071

* Actual average salary. † Estimated average salary.

All but 2 of the managers had graduated from grammar school, 39 had attended high school, 7 had attended business school, and 8 had attended college. There were 23 of the managers who had had previous experience in the feed business, and 23 had been farmers before becoming managers.

LABOR

Most of the stores had the equivalent of two or more men working full time. The average number was three, including the manager or proprietor. The number of stores employing different numbers of man units is shown in table 4. By a " man unit " is meant the equivalent of one man working full time.

TABLE 4. DISTRIBUTION OF STORES ACCORDING TO NUMBER OF MAN UNITS PER STORE, 68 STORES

Range in man units	Number of stores	Per cent of total number
0.0 to 0.9	1	1.5
1.0 to 1.9	14	20.6
2.0 to 2.9	18	26.5
3.0 to 3.9	20	29.4
4.0 to 4.9	7	10.3
5.0 to 5.9	3	4.4
6.0 to 6.9	4	5.9
7.0 to 7.9	1	1.5
Total	68	100.0

CAPITAL

The average capital of 43 stores owning their buildings was $38,856.67, of which 70.4 per cent was in current assets and 29.6 per cent was in fixed assets (table 5). More than one-third of the total capital was invested in accounts and notes receivable, representing credit carried for customers. Merchandise inventory constituted one-fourth, and land and buildings about one-fifth, of the total capital. Of the total liabilities and net worth, 30.9 per cent was current liabilities, 4.9 per cent was fixed liabilities, and 64.2 per cent was net worth, representing capital furnished by the owners.

The average capital of 11 stores using rented buildings was $21,276.08, or slightly more than half as much as the average investment of the stores owning land and buildings. Current assets made up 95.7 per cent, and fixed assets 4.3 per cent, of this amount (table 6). The net worth of these stores was 81.3 per cent of their total liabilities and net worth, only 18.7 per cent of their capital being owed to others.

The average net sales of the stores using rented buildings were $67,374.36, as compared with $93,664.58 for the stores owning buildings.

In table 7 is given a comparison of the assets, exclusive of land and buildings, of the 43 stores owning land and buildings, with those of the 11 stores using rented buildings. The average total investment (except land and buildings) was $30,863.42 for the stores that owned land and buildings, and $21,276.08 for the other stores. The distribution of the investment among the various asset items was about the same in both cases, except that the stores renting land and buildings had a larger proportion in cash while the stores owning land and buildings had a larger proportion invested in equipment.

Of the 43 stores owning buildings (table 5), 13 were cooperative and 30 were privately operated. The privately operated stores had an average total investment of $41,830.60, as compared with $31,993.76 for the cooperative stores. The larger average investment of the privately operated stores is probably explained by the fact that they had been in business longer, had accumulated more fixed assets, and were extending more credit. The average net sales of the two groups were about the same.

TABLE 5. INVESTMENT AND SOURCES OF CAPITAL, 43 STORES OWNING BUILDINGS

	13 cooperatives				30 private dealers				43 stores			
	Stores having item		All cooperatives		Stores having item		All private stores		Stores having item		All stores	
	Number of stores	Average amount	Average amount	Per cent of total	Number of stores	Average amount	Average amount	Per cent of total	Number of stores	Average amount	Average amount	Per cent of total
Assets:												
Cash	13	$ 2,185.56	$ 2,185.56	6.8	30	$ 1,890.22	$ 1,890.22	4.5	43	$ 1,979.51	$ 1,979.51	5.1
Accounts and notes receivable	13	11,055.79	11,055.79	34.6	30	16,414.70	16,414.70	39.3	43	14,794.56	14,794.56	38.1
Inventory	13	9,249.76	9,249.76	28.9	30	10,694.19	10,694.19	25.6	43	10,257.50	10,257.50	26.4
Other current assets	7	749.72	403.70	1.3	8	1,140.72	304.19	0.7	15	958.25	334.28	0.8
Total current assets	13	$22,894.81	$22,894.81	71.6	30	$29,303.30	$29,303.30	70.1	43	$27,365.85	$27,365.85	70.4
Land and buildings	13	$6,257.82	$6,257.82	19.6	30	$8,745.27	$8,745.27	20.9	43	$7,993.25	$7,993.25	20.6
Warehouse equipment	11	2,342.70	1,982.28	6.2	27	3,155.04	2,839.54	6.8	38	2,919.89	2,580.37	6.6
Furniture and fixtures	11	465.82	394.16	1.2	27	548.87	493.98	1.2	38	524.83	463.80	1.2
Delivery equipment	4	835.25	257.00	0.8	20	672.77	448.51	1.0	24	699.85	390.61	1.0
Other fixed assets	1	2,700.00	207.69	0.6	..	.....	.....	....	1	2,700.00	62.79	0.2
Total fixed assets	13	$9,098.95	$9,098.95	28.4	30	$12,527.30	$12,527.30	29.9	43	$11,490.82	$11,490.82	29.6
Total assets	..	.....	$31,993.76	100.0	..	.....	$41,830.60	100.0	..	.....	$38,856.67	100.0
Liabilities and net worth:												
Notes payable	11	$24,750.00	$20,942.38	65.4	23	$9,158.37	$7,021.42	16.8	34	$14,202.75	$11,230.08	28.9
Accounts payable	8	1,454.95	895.36	2.8	10	1,360.51	453.50	1.1	18	1,402.49	587.09	1.5
Other current liabilities	6	1,161.70	536.17	1.7	2	328.55	35.24	0.1	8	1,003.41	186.68	0.5
Total current liabilities	13	$22,373.91	$22,373.91	69.9	24	$9,387.70	$7,510.16	18.0	37	$13,950.42	$12,003.85	30.9
Mortgages	5	$3,110.00	$1,196.16	3.8	9	$5,022.22	$1,506.67	3.6	14	$4,339.29	$1,412.79	3.6
Certificates of indebtedness	9	2,177.14	1,507.25	4.7	..	.....	.....	....	9	2,177.14	455.68	1.2
Other fixed liabilities	1	2,231.87	171.68	0.5	..	.....	.....	....	1	2,231.87	51.91	0.1
Total fixed liabilities	10	$3,737.61	$2,875.09	9.0	9	$5,022.22	$1,506.67	3.6	19	$4,346.11	$1,920.38	4.9
Common stock	4	$16,113.86	$4,958.11	15.5	5	$31,200.00	$ 5,200.00	12.4	9	$24,495.05	$ 5,126.87	13.2
Preferred stock	1	7,150.00	550.00	1.7	1	2,800.00	93.33	0.2	2	4,975.00	231.40	0.6
Surplus	13	1,236.65	1,236.65	3.9	5	8,401.65	1,400.27	3.4	18	3,226.92	1,350.80	3.5
Owned	..	.....	.....	....	25	31,344.20	26,120.17	62.4	25	31,344.20	18,223.37	46.9
Net worth	13	$6,744.76	$6,744.76	21.1	30	$32,813.77	$32,813.77	78.4	43	$24,932.44	$24,932.44	64.2
Total liabilities and net worth	..	.....	$31,993.76	100.0	..	.....	$41,830.60	100.0	..	.....	$38,856.67	100.0
	Average current ratio 1 to 1				Average current ratio 3.1 to 1				Average current ratio 2.3 to 1			

TABLE 6. INVESTMENT AND SOURCES OF CAPITAL, 11 STORES USING RENTED BUILDINGS

	Stores having item		All stores	
	Number of stores	Average amount	Average amount	Per cent of total
Assets:				
Cash	11	$3,911.53	$3,911.53	18.4
Accounts and notes receivable	11	9,525.35	9,525.35	44.8
Inventory	11	6,757.12	6,757.12	31.7
Other current assets	2	900.53	163.73	0.8
Total current assets	..	.....	$20,357.73	95.7
Warehouse equipment	7	$793.29	$504.82	2.4
Furniture and fixtures	7	321.81	204.78	0.9
Delivery equipment	4	574.06	208.75	1.0
Other fixed assets	..	.....	.....	....
Total fixed assets	..	.....	$918.35	4.3
Total assets	..	.....	$21,276.08	100.0
Liabilities and net worth:				
Notes payable	6	$4,560.00	$2,487.27	11.7
Accounts payable	5	3,080.58	1,400.27	6.6
Other current liabilities	1	196.35	17.85	0.1
Total current liabilities	..	.....	$3,905.39	18.4
Certificates of indebtedness	1	$654.40	$59.49	0.3
Other fixed liabilities	..	.....	.....	....
Total fixed liabilities	..	.....	$59.49	0.3
Common stock	1	$ 6,340.00	$ 576.36	2.7
Preferred stock	1	5,760.00	523.64	2.4
Surplus	2	1,298.32	236.06	1.1
Owned	10	17,572.66	15,975.14	75.1
Net worth	..	.....	$17,311.20	81.3
Total liabilities and net worth	..	.....	$21,276.08	100.0

Current ratio 5.2 to 1

In table 8 is given a comparison of the amounts of capital obtained from various sources by stores operated respectively by individual proprietors, by partnerships, and by private corporations. The amount of capital furnished by the owners is shown in the net-worth section of the table. For the 10 stores operated by partnerships, 93 per cent of the capital was furnished by the proprietors. Individual proprietors furnished 77 per cent of the capital used by them, and 71 per cent of the capital used by the private corporations was furnished by the stockholders. The partnership stores had no long-term liabilities. Notes payable constituted 24.9 per

TABLE 7. INVESTMENT OF STORES OWNING AND STORES RENTING LAND AND BUILDINGS, NOT INCLUDING INVESTMENT IN LAND AND BUILDINGS

	11 stores renting buildings			
	Stores having item		All stores	
	Number of stores	Average amount	Average amount	Per cent of total
Assets:				
Cash	11	$3,911.53	$3,911.53	18.4
Accounts and notes receivable	11	9,525.35	9,525.35	44.8
Inventory	11	6,757.12	6,757.12	31.7
Other current assets	2	900.53	163.73	0.8
Total current assets		.....	$20,357.73	95.7
Warehouse equipment	7	$793.29	$504.82	2.4
Furniture and fixtures	7	321.81	204.78	0.9
Delivery equipment	4	574.06	208.75	1.0
Other fixed assets	..	.....	.....	....
Total fixed assets	..	.....	$918.35	4.3
Total assets	..	.....	$21,276.08	100.0

	43 stores owning buildings			
	Stores having item		All stores	
	Number of stores	Average amount	Average amount	Per cent of total
Assets:				
Cash	43	$ 1,979.51	$ 1,979.51	6.4
Accounts and notes receivable	43	14,794.56	14,794.56	47.9
Inventory	43	10,257.50	10,257.50	33.3
Other current assets	15	958.25	334.28	1.1
Total current assets	..	.....	$27,365.85	88.7
Warehouse equipment	38	$2,919.89	$2,580.37	8.3
Furniture and fixtures	38	524.83	463.80	1.5
Delivery equipment	24	699.85	390.61	1.3
Other fixed assets	1	2,700.00	62.79	0.2
Total fixed assets	..	.....	$3,497.57	11.3
Total assets	..	.....	$30,863.42	100.0

cent of the total liabilities and net worth of the private corporations, but only 15.6 per cent and 6.2 per cent of the total liabilities and net worth of the individual proprietorships and the partnerships, respectively.

The amounts of capital obtained from various sources by 3 cooperative stock corporations and 10 cooperative membership corporations are shown

TABLE 8. SOURCES OF CAPITAL, 41 PRIVATELY OPERATED STORES

	23 stores operated by individual proprietors				10 stores operated by partnerships				8 stores operated by private corporations*			
	Stores having item		All stores		Stores having item		All stores		Stores having item		All stores	
	Number of stores	Average amount	Average amount	Per cent of total	Number of stores	Average amount	Average amount	Per cent of total	Number of stores	Average amount	Average amount	Per cent of total
Liabilities:												
Accounts payable	8	$2,524.52	$ 878.09	2.5	2	$ 579.30	$ 115.86	0.4	4	$ 1,499.62	$ 749.81	1.7
Notes payable	18	7,068.67	5,532.00	15.6	4	5,187.50	2,075.00	6.2	7	12,880.93	11,270.82	24.9
Other current liabilities	1	886.00	38.52	0.1	..	.....	.....	....	1	171.10	21.39	....
Total current liabilities	19	$7,806.22	$6,448.61	18.2	4	$5,477.15	$2,190.86	6.6	7	$13,762.30	$12,042.02	26.6
Mortgages	8	$4,775.00	$1,660.87	4.7	..	.....	.....	....	1	$7,000.00	$875.00	1.9
Certificates of indebtedness	..	.....	.....	....	..	.....	.....	....	2	832.20	208.05	0.5
Other fixed liabilities	..	.....	.....	....	..	.....	.....	....	..	.....	.....	....
Total fixed liabilities	8	$4,775.00	$1,660.87	4.7	..	.....	.....	....	3	$2,888.13	$1,083.05	2.4
Net worth:												
Capital stock, common	..	.....	.....	....	..	.....	.....	....	7	$24,993.63	$21,869.43	48.3
Capital stock, preferred	..	.....	.....	....	..	.....	.....	....	3	5,233.33	1,963.75	4.4
Surplus	..	.....	.....	....	..	.....	.....	....	7	6,892.05	6,030.54	13.3
Owners' equity	23	$27,375.51	$27,375.51	77.1	10	$31,157.63	$31,157.63	93.4	1	18,118.62†	2,264.83	5.0
Total net worth	23	$27,375.51	$27,375.51	77.1	10	$31,157.63	$31,157.63	93.4	8	$32,128.55	$32,128.55	71.0
Total liabilities and net worth	..	.....	$35,484.99	100.0	..	.....	$33,348.49	100.0	..	.....	$45,253.62	100.0

* One cooperative store organized as an ordinary business corporation is included.
† This store was operated as part of a corporation. The investment in the feed business alone was included.

in table 9. The stock corporations obtained 75 per cent of their capital from the members, and borrowed most of the balance on notes. The membership corporations had practically no capital furnished by members. These associations borrowed 83 per cent of their total capital on short-term notes. Most of the notes were secured by members' demand notes deposited as collateral, or by the personal indorsement of the directors or the manager. Mortgages and certificates of indebtedness made up 5.1 per cent and 6 per cent, respectively, of the total liabilities and net worth of the membership corporations.

TABLE 9. SOURCES OF CAPITAL, 13 COOPERATIVE STORES

Item	3 stock corporations				10 membership corporations			
	Stores having item		All stores		Stores having item		All stores	
	Number of stores	Average amount	Average amount	Per cent of total	Number of stores	Average amount	Average amount	Per cent of total
Liabilities:								
Accounts payable	1	$3,572.33	$1,190.78	4.2	8	$ 1,215.26	$ 972.21	3.1
Notes payable	3	5,333.33	5,333.33	19.0	8	32,012.62	25,610.10	83.0
Other current liabilities	1	1,283.16	427.72	1.5	7	840.48	588.34	1.9
Total current liabilities	3	$6,951.83	$6,951.83	24.7	10	$27,170.65	$27,170.65	88.0
Mortgages	....	.....	.....	....	5	$3,110.00	$1,555.00	5.1
Certificates of indebtedness	....	.....	.....	....	8	2,323.03	1,858.43	6.0
Other fixed liabilities	....	.....	.....	....	1	2,231.87	223.19	0.7
Total fixed liabilities	....	.....	.....	....	9	$4,040.68	$3,636.62	11.8
Net worth:								
Capital stock, common	3	$17,280.00	$17,280.00	61.4	....	.....	.....	....
Capital stock, preferred	....	.....	.....	....	....	.....	.....	....
Surplus	3	3,924.81	3,924.81	13.9	....	.....	.....	....
Owners' equity	....	.....	.....	....	10	$66.25	$66.25	0.2
Total net worth	3	$21,204.81	$21,204.81	75.3	10	$66.25	$66.25	0.2
Total liabilities and net worth	....	.....	$28,156.64	100.0	....	.....	$30,873.52	100.0

The method of financing used by the membership corporations stands out in sharp contrast to that used by the cooperative stock corporations and the privately owned stores. The membership corporations borrowed practically all their capital on short-term obligations, while the others obtained most of their capital from the owners (table 10).

While some of the necessary capital for financing a feed store may be obtained more easily by borrowing on notes, mortgages, or certificates of indebtedness, the interest on these liabilities constitutes a fixed charge against the income from the business, and the loans must be repaid at maturity unless the lenders are willing to renew them. When a large proportion of the capital is borrowed, the required payments of interest and principal may at times exceed the capacity of the corporation to pay and thereby place the management in an embarrassing position. A business

TABLE 10. SOURCES OF CAPITAL IN DIFFERENT TYPES OF BUSINESS ORGANIZATIONS

	Number of stores	Current liabilities	Fixed liabilities	Owned capital
		(Per cent)	(Per cent)	(Per cent)
Private stores:				
Individual	23	18.2	4.7	77.1
Partnership	10	6.6	....	93.4
Corporation	8	26.6	2.4	71.0
Cooperative corporations:				
Stock	3	24.7	....	75.3
Membership	10	88.0	11.8*	0.2

* Includes 6 per cent in certificates of indebtedness (which are considered here as fixed liabilities).

financed largely by permanent investment of the owners or members, is in a much more secure financial condition.

Most feed-store proprietors have considered it advisable to obtain at least 50 per cent of their capital in some permanent form, such as stock, on which dividends are payable only when earned. This provides for the fixed investment and some working capital. Cooperative membership corporations might obtain the same result by the use of certificates of interest or certificates of indebtedness payable only after the death or the withdrawal of members. Either might be so drawn that interest would be payable only when earned. When the owners have considerable equity in the business, losses due to temporarily unfavorable conditions are not so likely to handicap the business permanently. The method heretofore used by the membership corporations is very uncertain and unsafe. Some cooperative associations have invested too heavily in real estate, and later have found themselves in difficulty when their margins were not sufficient, in the early stages of the business, to meet the interest payments on their borrowed capital. In some cases in which heavy losses were suffered, stores have found themselves paying interest on more capital than they were using in the business. Lack of sufficient capital also has handicapped many of the stores in buying.

RATIO OF CURRENT ASSETS TO CURRENT LIABILITIES

In table 11, the 65 stores for which balance sheets were prepared are distributed according to the ratio of current assets to current liabilities as of December 31, 1924. Of these stores, 14 had no current liabilities. The 51 remaining stores had an average ratio of $4.80 of current assets to $1 of current liabilities. In general, a ratio of $2 of current assets for each dollar of current liabilities is considered an indication of a sound current financial position. Only 19 of the 65 stores were below this standard, although the ratio would naturally be lower at this time of the year when more funds are borrowed to carry inventories and accounts receivable.

TABLE 11. DISTRIBUTION OF 65 STORES ACCORDING TO RATIO OF CURRENT ASSETS TO CURRENT LIABILITIES, DECEMBER 31, 1924

Dollars of current assets per dollar of current liabilities	Number of stores	Per cent of total number
Less than 2	19	29.2
2.0 to 3.9	16	24.6
4.0 to 5.9	4	6.2
6.0 to 7.9	3	4.6
8.0 or more	9	13.9
No current liabilities	14	21.5
Total	65	100.0

LAND AND BUILDINGS

VALUE OF LAND AND BUILDINGS

The average value of the land and buildings owned by 53 stores for which the information was obtained, was $7967.28, the range of value being from $689.50 to $18,826.60. The variation in land and building investment is shown in table 12. About 21 per cent of the total capital of these stores was invested in real esta e. In all cases, buildings constituted the major part of the investment in real estate, the land having a relatively small value.

TABLE 12. DISTRIBUTION OF 53 STORES ACCORDING TO VALUE OF LAND AND BUILDINGS

Range of value*	Number of stores	Per cent of total number
$5,000 or less	19	35.8
$5,001 to $10,000	17	32.1
$10,001 to $15,000	11	20.8
$15,001 to $20,000	6	11.3
Total	53	100.0

* Average of values reported for beginning and end of year.

NUMBER OF BUILDINGS AND TYPES OF CONSTRUCTION

Of the 70 stores regarding which this information was obtained, 40 used only one building, 16 used two buildings, 11 used three buildings, 2 used four buildings, and 1 used five buildings. Wooden buildings predominated, only 17 of the 118 buildings being made of any other material. Since no heat is required in a feed warehouse, the chief essentials of construction are good floors, a water-tight roof, and rain-proof siding.



FIGURE 2. SOME TYPES OF WAREHOUSES USED BY FEED DEALERS AND COOPERATIVES

STORAGE FACILITIES

Estimates were obtained concerning the storage capacity of 65 of the 70 stores. Of these stores, 37 had facilities for storage of feed in bulk, while 28 could store only sacked goods. Only 6 had a storage capacity of less than 100 tons for bulk feed, 16 had storage facilities for from 100 to 200 tons, and only 6 could store more than 300 tons. In table 13 is shown a distribution of the 37 stores according to bulk-storage capacity.

TABLE 13. ESTIMATED BULK-STORAGE CAPACITY, 37 STORES

Range of capacity	Number of stores	Per cent of total number
200 tons or less	22	59.5
201 to 400 tons	11	29.7
401 to 600 tons	2	5.4
601 to 800 tons	2	5.4
Total	37	100.0



FIGURE 3. TWO NEW METAL-COVERED WAREHOUSES BUILT IN 1924, ONE WITH BULK STORAGE AT ONE END, THE OTHER WITH BULK STORAGE ALONG ONE SIDE OF THE BUILDING

In table 14 is shown a distribution of 59 stores according to capacity for storage of sacked feed. Most of the stores had greater storage capacity for sacked than for bulk feed.

TABLE 14. ESTIMATED SACKED-STORAGE CAPACITY, 59 STORES

Range of capacity	Number of stores	Per cent of total number
200 tons or less	26	44.1
201 to 400 tons	21	35.6
401 to 600 tons	7	11.9
Over 600 tons	5	8.5
Total	59	100.0

DISTANCE FROM RAILROAD SIDING

Formerly, commercial feeds were handled largely by gristmills located on water-power sites away from a railroad track. Because of the large increase in the sale of commercial feeds shipped in from the West, location on a railroad siding is now a great advantage. When the warehouse is on a siding, merchandise can be unloaded directly from the car without any hauling expense. Mechanical devices for unloading also can be used more advantageously.

Of the 70 stores included in this study, 40 were on a track and 13 others were 50 feet or less from a siding.

BUILDING ARRANGEMENT

The requirements for a good building arrangement for a feed store vary according to the type of business conducted and according to whether or not the warehouse is located on a railroad siding. The stores naturally fall into three groups, according to type of service rendered, as follows: (1) stores handling sacked feed only; (2) stores handling both sacked and bulk feed; and (3) stores that do grinding in addition to the regular merchandising business.

Although some mixing of feed is done by all types of stores, comparatively little is done by those handling sacked feed only. For such stores it is

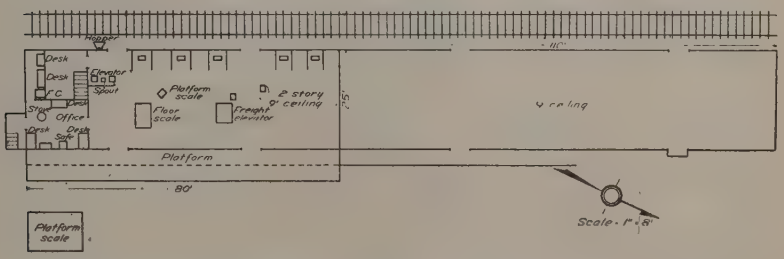


FIGURE 4. A LONG, NARROW WAREHOUSE WITH THE OFFICE AT ONE END

Feed can be unloaded from the car easily, since it is only a short distance from the receiving platform to the back of the warehouse. The long delivery platform makes it possible to serve several customers at once

desirable to use only one floor, so arranged that feed can be unloaded conveniently (either directly from the car, or from a truck in case the warehouse is not on track) and can be loaded easily into customers' wagons or trucks. The use of more than one floor for sacked feed involves extra labor and expense in moving the feed up and down. Sacked feed cannot be piled more than 8 to 10 feet above the floor without excessive labor or special equipment for this purpose, which is not justified except when the store is doing a large volume of business.

Most of the stores included in this study had an office located in the end of the warehouse nearest the street. In a large warehouse an office near

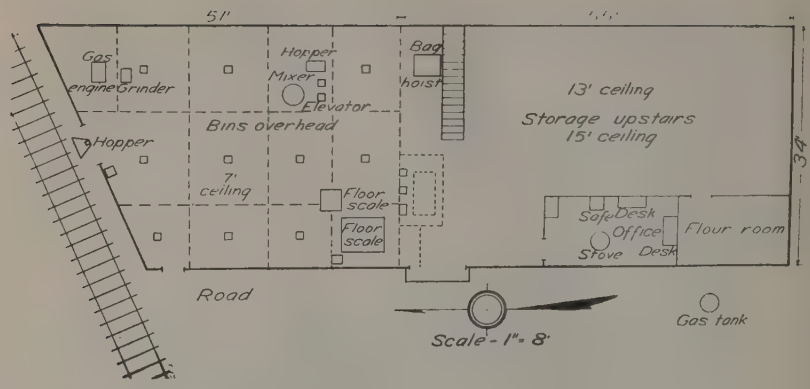


FIGURE 5. A WAREHOUSE WITH TRACK AT ONE END OF THE BUILDING

This building is arranged for handling both sacked and bulk feed. The office and the scales are conveniently located near the delivery door. Bulk feed is unloaded into a hopper and elevated to the bins on the second floor. Sacked feed is trucked 75 feet through the warehouse to the sacked-storage space in the opposite end of the warehouse from the track. Had the arrangement been reversed, to provide storage for sacked feed in the end near the track, much labor would have been saved in unloading cars and the bulk feed could have been conveyed mechanically to bins in the opposite end of the building at little added cost

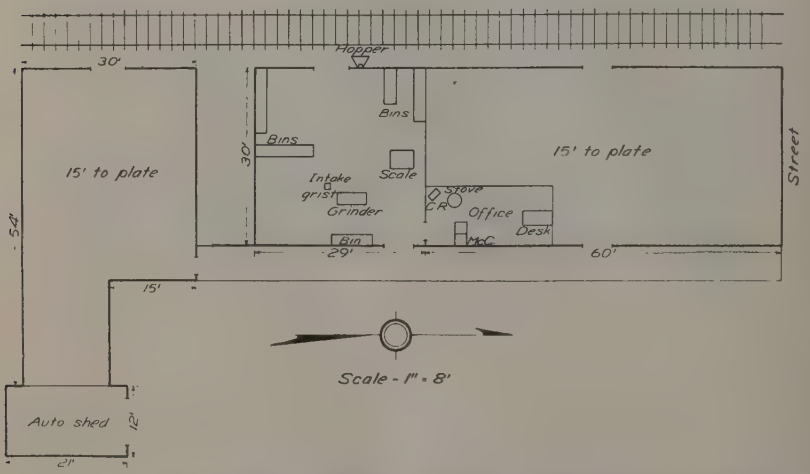


FIGURE 6. A CONVENIENTLY ARRANGED, MEDIUM-SIZED WAREHOUSE WITH THE OFFICE IN THE CENTER OF THE BUILDING BETWEEN THE SACKED- AND BULK-STORAGE SPACES

The office is readily accessible. The mill is close to the delivery door, to facilitate receiving and delivering grists. Three cars can be spotted on track and unloaded simultaneously. The three delivery doors make it possible to serve as many customers at the same time

the center might be more convenient, since less running back and forth in making out slips and waiting on customers would be necessary.

Stores handling bulk feed require bin space, which preferably should be on the second floor. Funnel-shaped bottoms in the bins save labor, since no shoveling is necessary to get the feed to the outlets. Most stores that handle bulk feed also do mixing and grinding.

The floor of a freight car is about 4 feet above the ground level. The receiving platform should be at or near this level. A number of stores visited had their platforms much lower, but this was not a serious fault. Two of the stores were so located that the feed could be received on the second floor; this was an advantage.

The usual height of wagon and truck boxes into which feed is loaded from the warehouse is from $2\frac{1}{2}$ to 3 feet. Platforms as high as or higher than the wagon- or truck-body level are desirable, because they eliminate lifting, speed up delivery, and save labor. About one-third of the stores that were visited had delivery platforms less than $2\frac{1}{2}$ feet above the ground. This was a serious disadvantage, and one that could not be remedied without raising the whole building or depressing the driveway.

Floor plans of three warehouses are shown in figures 4 to 6.

METHODS OF UNLOADING FEED FROM THE CAR

There were 32 stores on railroad sidings which unloaded bulk feed from the car directly into a hopper. From the hopper the feed was conveyed to storage bins by means of a bucket-type elevator or a screw conveyor and elevator. Overhead portable elevators were used by 3 other stores on a track. Some of the stores used power shovels in the car, but most of them pushed bulk feed to the car door by hand shovels.

Some of the warehouses were too far from the track to use a screw conveyor, or were not permitted by the railroad to build one. In such cases, the feed either was sacked in the car or was hauled in bulk to the warehouse, where it was dumped or shoveled into a hopper and elevated to the storage bins.

Only 4 of the stores had hopper scales connected with the unloading elevator, for checking the weights of incoming bulk feed. These 4 hopper scales were not used frequently.

Most of the stores that were on a siding or were accessible to a siding by a permanent or a temporary platform, used hand trucks to unload cars of sacked feed. In a few cases four-wheeled platform trucks, carrying a half ton or more to a load, were used. In 1 store a portable conveyor carried the sacked feed from the car to a bag hoist in the warehouse. The hoist dropped the sacks on a continuous belt on which they could be carried the full length of the warehouse. There were 2 stores not directly on a track which had rigged up overhead tracks with hanging carriers, to transfer feed from the car to the warehouse, and 22 stores that were not on or near a siding hauled their feed from the car to the warehouse by wagon or truck.

A summary of the methods of unloading feed at 70 stores is given in table 15.

TABLE 15. METHODS OF UNLOADING FEED FROM THE CAR, 70 STORES

Method of unloading	Number of stores
Bulk feed	
Unloaded directly from car into stationary hopper and elevated to bins	32
Unloaded directly from car by portable elevator into stationary hopper and elevated to bins	3
Hauled in bulk by truck or wagon to stationary hopper and elevated to bins	5
Sacked in car and trucked by hand into warehouse	16
Sacked in car and hauled by truck or wagon to warehouse	12
Sacked in car and transferred by carrier or conveyor	2
Sacked feed	
Trucked by hand directly into warehouse	46
Transferred by track or carrier	2
Hauled by wagon or truck to warehouse	22

EQUIPMENT

WAREHOUSE EQUIPMENT

The average value of warehouse equipment used by 56 stores was $2499.45, and the range was from $8.78 to $15,552.80. Only 15 of the 56 stores for which this information was obtained had more than $3000 worth of warehouse equipment.

One or two hand trucks, and either a portable scale or a platform scale set in the floor, constitute the necessary warehouse equipment for a store handling only sacked feed. Feed elevators are desirable when bulk feed is handled. Stores that do grinding and mixing require additional expensive equipment for these services. The relatively large investment in equipment required by these stores is illustrated by the fact that the average amount of net sales per dollar invested in warehouse equipment for 27 stores doing grinding was $52.52, while for the 17 stores doing no grinding the figure was $600.17.

The number of different items of warehouse equipment used by 68 stores is shown in table 16. The only items of equipment that were duplicated in any one store were inside floor scales, portable scales, hand trucks, and bag holders.

Several stores were equipped with large automatic-dial platform scales for weighing out feed. Where such scales are used, weighing can be done more quickly and customers are able to see plainly the weight recorded. Fair allowance on bags can be made by adjusting a tare indicator.

There were 13 of the stores which had feed mixers. Of these, 4 were horizontal batch mixers, 3 were tumbling batch mixers, and 2 were home-made conveyors which carried the feed into elevators, dumped it over staggered boards within a chute, and then passed it through the elevators again. Most of the mixers had been installed recently.

Of the 70 stores included in this study, 45 used machinery requiring power. Electric power was the most commonly employed. Some stores had gasoline or kerosene engines. Only 3 stores depended on water power

TABLE 16. ITEMS OF WAREHOUSE EQUIPMENT, 68 STORES

Kind of equipment	Number
Feed grinders	38
Corn shellers	4
Cracked-corn machines	20
Corn and cob crushers	18
Feed mixers	13
Inside floor scales	65
Outside platform scales	14
Portable scales	97
Hopper scales	4
Feed elevators, stationary	41
Feed elevators, portable	3
Feed stackers	4
Freight elevators	10
Bag elevator	1
Hoist	1
Hand trucks	219
Platform trucks	9
Power shovels	4
Unloading wheel scoop	1
Bag holders	42
Stone mill	1
Buckwheat mills	4
Flour mill	1
Fanning mills	4
Tracks and carriers	2

alone. This type of power is not sufficiently reliable, and, furthermore, the large fixed investment required by a water-power plant, and the repairs necessary because of occasional high water, make this an expensive type of power for a store doing only a small amount of grinding. There was 1 store that obtained steam power from an adjacent milk plant. The number of stores using various types of power is shown in table 17.

TABLE 17. KINDS OF POWER USED, 70 STORES

Kind of power	Number of stores
No power	25
Electric only	22
Gasoline or kerosene engines only	15
Water only	3
Steam only	1
Electric, with gas auxiliary	3
Water, and gasoline engine	1

The horse-power of electric motors varied from 2 to 50, but more than half of the motors were of 10 to 20 horse-power. The smaller motors were used to drive elevators, while the larger were used to operate the grinding and other machinery.

Gasoline and kerosene engines varied from 1½ to 40 horse-power, but about two-thirds of them were of 6 to 20 horse-power.

OFFICE EQUIPMENT

The average amount invested in furniture and fixtures in 59 stores was $500.62, with the range from $61.75 to $2261.98. Two-thirds of the stores had less than $500 in office equipment.

The common articles of office equipment were desks, chairs, safes, adding machines, typewriters, cash registers, check protectors, accounts-receivable files, and stoves.

The individual accounts-receivable files included the McCaskey, National, and other similar systems of keeping together each customer's sales slips.

DELIVERY EQUIPMENT

Half of the stores furnished no delivery service, and most of the others delivered less than 10 per cent of the goods sold. The average value of delivery equipment used by 34 stores was $622.88, the range being from $33.25 to $2700. Only 5 stores had delivery equipment worth more than $800.

SALES, MARGINS, EXPENSES, AND INCOME

SUMMARY

From the records available, it was possible to make up complete statements of the year's business for 47 stores, including 14 cooperatives and 33 private dealers. The figures for each store were adjusted to a standard classification of accounts, an explanation of which is given on pages 6 and 7. The average figures for all the stores, and for the cooperatives and private dealers separately, are shown in table 18.

The average net sales of the cooperative stores amounted to $89,798.06, or slightly more than the average net sales of the privately operated stores, which were $87,629.77. The average gross margin obtained by the cooperative stores was $9242.71, or 10.29 per cent of the net sales. The average margin obtained by the privately operated stores was $10,723.44, or 12.24 per cent of their net sales. The average net sales for all the stores were $88,275.64. The gross margin was $10,282.37, or 11.65 per cent of the net sales.

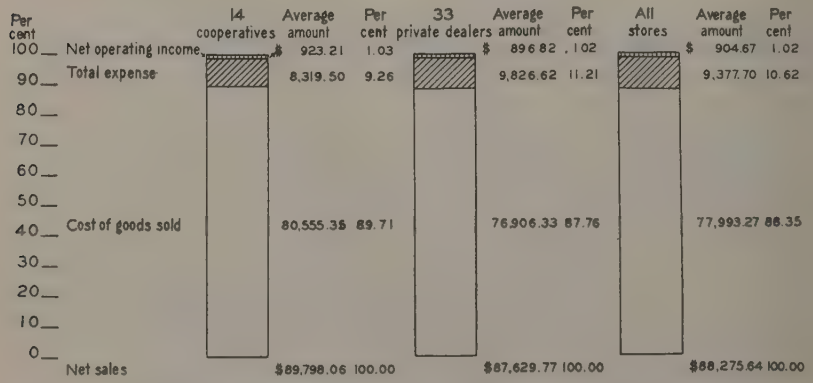


FIGURE 7. DISTRIBUTION OF THE NET SALES OF 14 COOPERATIVE AND 33 PRIVATE FEED STORES IN NEW YORK STATE, 1924

TABLE 18. AVERAGES OF NET SALES, GROSS MARGINS, EXPENSES, AND NET INCOME, 47 STORES

	14 cooperatives				33 private dealers				All stores			
	Stores having item		All cooperatives		Stores having item		All private stores		Stores having item		All stores	
	Number of stores	Average amount	Average amount	Per cent of net sales	Number of stores	Average amount	Average amount	Per cent of net sales	Number of stores	Average amount	Average amount	Per cent of net sales
Net sales	14	$89,798.06	$89,798.06	100.00	33	$87,629.77	$87,629.77	100.00	47	$88,275.64	$88,275.64	100.00
Inventory at beginning	14	$ 8,169.06	$ 8,169.06	9.10	33	$ 9,960.75	$ 9,960.75	11.37	47	$ 9,427.05	$ 9,427.05	10.68
Purchases	14	81,167.56	81,167.56	90.39	33	75,910.59	75,910.59	86.63	47	77,476.50	77,476.50	87.77
Inventory at end	14	8,781.27	8,781.27	9.78	33	8,965.01	8,965.01	10.23	47	8,910.28	8,910.28	10.09
Cost of goods sold	14	80,555.35	80,555.35	89.71	33	76,906.33	76,906.33	87.76	47	77,993.27	77,993.27	88.35
Gross margins	14	$9,242.71	$9,242.71	10.29	33	$10,723.44	$10,723.44	12.24	47	$10,282.37	$10,282.37	11.65
Salaries and wages	14	$3,544.02	$3,544.02	3.95	33	$4,735.79	$4,735.79	5.40	47	$4,380.79	$4,380.79	4.96
Land, building, and equipment expense	14	955.51	955.51	1.06	33	997.62	997.62	1.14	47	985.08	985.08	1.12
Heat, light, and water	11	102.77	80.75	0.09	31	57.81	54.31	0.06	42	69.59	62.18	0.07
Power	5	603.84	215.66	0.24	22	452.94	301.96	0.34	27	480.89	276.25	0.31
Telephone and telegraph	13	58.24	54.08	0.06	33	73.09	73.09	0.08	46	68.89	67.43	0.08
Auditing	6	103.32	44.28	0.05	1	86.25	2.61	.....	7	100.88	15.03	0.02
Advertising	12	48.13	41.25	0.05	31	99.16	93.15	0.11	42	86.94	77.69	0.09
Office supplies	14	70.73	70.73	0.08	30	69.89	63.53	0.07	44	70.16	65.68	0.07
Legal and collection expense	7	35.24	17.62	0.02	15	65.08	29.58	0.03	22	55.58	26.02	0.03
Bad debts	11	1,164.78	915.18	1.02	32	699.43	678.23	0.77	43	818.47	748.81	0.85
Travel expense	4	39.25	11.21	0.01	8	174.47	42.29	0.05	12	129.39	33.03	0.04
Demurrage	5	9.67	3.45	.....	4	20.25	2.45	.....	9	14.37	2.75	....
Delivery expense	4	456.78	130.51	0.14	26	449.57	354.21	0.40	30	450.53	287.58	0.33
Other supplies	12	90.45	77.53	0.09	30	115.06	104.61	0.12	42	108.03	96.54	0.11
Insurance on merchandise	14	127.91	127.91	0.14	33	163.37	163.37	0.19	47	152.81	152.81	0.17
Miscellaneous expense	6	36.35	15.58	0.02	21	108.32	68.93	0.08	27	92.33	53.04	0.06
Net interest	14	2,014.23	2,014.23	2.24	33	2,060.89	2,060.89	2.35	47	2,046.99	2,046.99	2.32
Total expense	14	$8,319.50	$8,319.50	9.26	33	$9,826.62	$9,826.62	11.21	47	$9,377.70	$9,377.70	10.62
Net operating income	14	$923.21	$923.21	1.03	33	$896.82	$896.82	1.02	47	$904.67	$904.67	1.02
Other income	6	186.82	80.06	0.09	1	46.00	1.39	.....	7	166.70	24.83	0.03
Net income	14	$1,003.27	$1,003.27	1.12	33	$898.21	$898.21	1.02	47	$929.50	$929.50	1.05

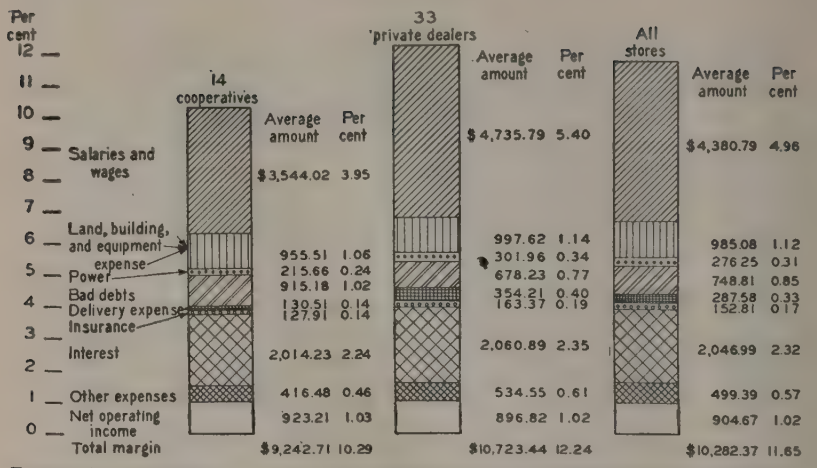


FIGURE 8. DISTRIBUTION OF THE GROSS MARGIN OF 14 COOPERATIVE AND 33 PRIVATE FEED STORES IN NEW YORK STATE, 1924

The total expenses were $8319.50 and $9826.62, respectively, for the cooperative and the privately operated stores. Salary allowance for proprietors, and interest on owned as well as borrowed capital, are included. The total expenses constituted, respectively, 9.26 per cent and 11.21 per cent of the net sales. For all the stores, the total expenses were $9377.70, or 10.62 per cent of the net sales. Salaries and wages, real estate and equipment expense, bad debts, and interest, were the principal items, constituting nearly 90 per cent of the total.

The average net operating income was $923.21 for the cooperative stores and $896.82 for the privately operated stores. In each case, the operating income amounted to about 1 per cent of the net sales. Including income from other sources, the net income of the cooperative stores was $1003.27, or 1.12 per cent of the net sales, while the net income of the privately operated stores was $898.21, or 1.02 per cent of the net sales. These net-income figures represent the amounts left for the owners after all expenses, including salary allowance for the proprietors and interest on the average net worth, have been deducted from the gross margins and the other income.

The figures given in table 18 are the arithmetical averages of the individual figures for each of the 47 stores. The percentage figures are calculated from the averages of the amounts. Slightly different results are obtained if the percentages for each individual store are first calculated and then an arithmetical average of the percentages is computed. These averages of the individual percentages are shown in table 19 for the same stores as are included in table 18. Slight differences are noted in the percentage figures for cost of goods sold, gross margins, salaries and wages, total expense, and net income.

In the tables and discussion which follow, the minor differences in average percentage figures for the same items are due to the two methods of computation. Where an average for the whole group is desired, the averages are computed as in table 18; but if individual stores are compared, the figures are on the same basis as in table 19.

TABLE 19. AVERAGE OF THE PERCENTAGES THAT MARGINS, EXPENSES, AND INCOME ARE OF NET SALES, 47 STORES

	14 cooperatives	33 private dealers	All stores
Net sales	(Per cent) 100.0	(Per cent) 100.0	(Per cent) 100.0
Cost of goods sold	90.6	88.2	88.9
Gross margins	9.4	11.8	11.1
Salaries and wages	3.8	5.7	5.1
Land, building, and equipment expense	0.9	1.2	1.1
Heat, light, and water	0.1	0.1	0.1
Power	0.2	0.3	0.3
Telephone and telegraph	0.1	0.1	0.1
Auditing	0.1	....	....
Advertising	....	0.1	0.1
Office supplies	0.1	0.1	0.1
Legal and collection expense	....	0.1	....
Bad debts	1.0	0.7	0.8
Travel expense	....	....	....
Demurrage	....	....	....
Delivery expense	0.1	0.4	0.3
Other supplies	0.1	0.1	0.1
Insurance on merchandise	0.1	0.2	0.2
Miscellaneous expense	....	0.1	0.1
Net interest	2.2	2.5	2.4
Total expense	8.8	11.7	10.8
Net operating income	0.6	0.1	0.3
Other income	0.2	....	....
Net income	0.8	0.1	0.3

SALES

Volume of business

A satisfactory record of sales for the year was obtained from each of 64 stores. The average net sales of these stores was $89,158.93, with a range of from $21,372.34 to $227,664.50. Forty per cent of the stores had sales ranging between $50,001 and $80,000 (table 20).

TABLE 20. DISTRIBUTION OF 64 STORES ACCORDING TO AMOUNT OF NET SALES

Net sales	Number of stores	Per cent of total number
$50,000 or less	11	17.2
$50,001 to $80,000	26	40.6
$80,001 to $110,000	11	17.2
$110,001 to $140,000	6	9.4
$140,001 to $170,000	5	7.8
$170,001 to $200,000	2	3.1
Over $200,000	3	4.7
Total	64	100.0

Factors affecting sales of individual stores

Differences in volume of business are due to various causes. Chief among these are location, competition, and sales methods.

Location

Feed stores in intensive dairy regions have an opportunity to develop a larger volume of business than do stores in regions where less feed is purchased. Location on a road or a street much traveled by farmers is desirable. Since dairy farmers buy a large proportion of their feed when returning from daily trips to the milk station, a feed store near a milk station and on a main line of travel to and from the plant has a great advantage in getting business. Of the 66 feed stores located in towns where there were milk stations, 15 were within one hundred yards of the plant and 29 were from a quarter of a mile to a mile from it.

Further sales advantage is secured by location in or near the business center of a community. The size of the town is not a very important factor, however, since practically all the trade is with farmers. Of the 70 stores visited, 16 were located within one hundred yards of a business center and only 5 were a mile or more from such a center.

Some stores can serve only a limited territory because of natural boundaries, such as rivers, lakes, or other bodies of water, or steep hills. In general, stores so located that they can serve a territory extending several miles in each direction, have a better opportunity to develop a large business. The business of most of the stores included in this study extended over a territory from two to six miles in radius. Improved roads tend to enlarge the area that can be served by one store.

Number of customers

The number of customers depends on the extent of territory served, and the size of the farms in the region. The size of the town affects the number of customers to a greater extent than it does the volume of business, since in the larger towns many persons keep poultry and buy feed in comparatively small quantities. The number of customers served by each of 59 stores was estimated by the managers, although it was difficult to do this with any approach to accuracy because of the variations in numbers from time to time. Only 8 of the 59 stores claimed more than three hundred customers, most of the stores reporting from one hundred to three hundred.

Based on the managers' estimates of the number of customers, the average net sales per customer for the 59 stores were $410.69, the average sales per customer for individual stores ranging from $133.02 to $895.28.

Number of competitors

In order to determine the number of dealers within the same town and the extent of local competition in any one trading center, the number of competing dealers within two miles of each store was ascertained and tabulated (table 21). The number of dealers in local competition does not measure exactly the amount of real competition between the stores, for some farmers do business in more than one trading center.

TABLE 21. VARIATION IN NUMBER OF COMPETITORS WITHIN TWO MILES, 70 STORES

Number of competitors	Number of stores	Per cent of total number
0	17	24.3
1	20	28.6
2	24	34.3
3	9	12.9
Total	70	100.0

Advertising

The proprietors of most feed stores spend but little time or money in direct sales promotion either by making personal visits to farmers or by advertising. Some stores advertise in local newspapers, some by circular letters, and some in the local *Farm Bureau News*. Retail stores get the advantage of a considerable amount of advertising done by the manufacturers, many of whom furnish full sets of advertising matter consisting of letterheads, posters, show cards, painting service, meetings, lectures, study courses, premiums, feed samples, and other features. Part of the expense involved is sometimes paid by the local dealer, but usually the service is furnished by the manufacturer without charge. The various advertising mediums utilized by the retail stores included in this study, and the number of stores employing them, are as follows: calendars, 46; newspapers, 33; novelties, 13; pencils, 10; circular letters, 9; county-fair programs, 4; *Farm Bureau News*, 3. Other mediums are stands at fairs, motion-picture slides, grange curtains, and bank bulletins.

Credit

Many of the dealers who had been in business for a number of years believed that it was impossible to develop a large volume of business without liberal extension of credit. However, in this study it was found that the stores which were doing a large proportion of cash business had sales about as large as those doing most of their business on credit.

Discounts

Practice of the stores in offering discounts for cash, quantity purchases, or car-door delivery, varied considerably. Although the extension of credit involves considerable expense, only one-third of the stores granted any discount for cash on 100-pound lots, and only one-half gave a cash discount on ton lots. There were 3 stores which gave a cash discount of $1 per ton on 5-ton lots only. None of the stores made any extra charge for credit. The cash discount given by 67 stores on 100-pound or on ton lots is shown in table 22.

Of the 67 stores, 58 gave no quantity discount on ton lots sold on credit out of the warehouse, but 3 of these stores gave $1 per ton discount on 5-ton lots. Of the 9 stores which granted discounts on ton lots, 6 gave a discount of $1 per ton, 2 gave 1 per cent, and 1 gave 2 per cent.

Special prices were made by some of the stores in cases where one farmer was able to handle a straight carload of feed. Usually, when this was done,

TABLE 22. DISCOUNT FOR CASH ON FEED SOLD OUT OF WAREHOUSE, 67 STORES

100-pound lots

Discount on 100-pound lots	Number of stores	Per cent of total number
None	44	65.7
50 cents per ton	1	1.5
$1 per ton	12	17.9
$2 per ton	2	3.0
1 per cent	1	1.5
2 per cent	4	6.0
3 per cent	2	3.0
4 per cent	1	1.5
Total	67	100.0

Ton lots

Discount on ton lots	Number of stores	Per cent of total number
None	34	50.7
$1 per ton	21	31.3
$2 per ton	2	3.0
$3 per ton	2	3.0
1 per cent	1	1.5
2 per cent	4	6.0
3 per cent	2	3.0
4 per cent	1	1.5
Total	67	100.0

the farmer would buy bulk feed, sacking it in the car. Thus the only service rendered by the dealer was to order the feed and finance the operation for a day or two.

High prices of feed during and immediately following the World War stimulated attempts on the part of farmers to obtain feed at reduced prices by taking delivery at the car door and paying cash. Private dealers were reluctant to undertake this kind of business. Their customers expected a considerable reduction from the retail prices when buying in this way, but the expense of handling the feed at the car door was not much less, since most of the warehouse expenses were fixed, irrespective of the volume handled through the warehouse. It was also the dealers' experience that many of the customers who arranged for car-door delivery failed to take the feed from the car and pay cash on arrival.

Car-door delivery on strictly cash terms, however, is somewhat cheaper for the dealer because it involves less handling of the feed and no credit. Most of the cooperative stores which started on a car-door basis have gradually added warehousing and credit service to satisfy the demands of members. Most of the stores included in this study did but little car-door business in 1924 (table 23).

TABLE 23. PERCENTAGE OF CAR-DOOR BUSINESS, 42 STORES

Per cent of car-door business	Number of private dealers	Number of cooperatives	All stores
Less than 1	15	3	18
1.1 to 5	12	3	15
5.1 to 10	4	1	5
10.1 or more	3	1	4
Total	34	8	42

Information was obtained from 66 stores relative to the discount made on car-door delivery for cash. Of these stores, 18 gave no discount, 32 allowed $1 per ton, 1 gave $1.50 per ton, 10 gave $2 per ton, 1 each gave $2.50 and $3 per ton, and 1 each allowed 2½ per cent, 3½ per cent plus $1, and 6 per cent. A suitable discount should be available to farmers who prefer to forego the warehousing and credit service.

Seasonal variation

A record of sales for each month of the year was obtained from 40 stores. From these records an index of the average daily sales for each month was computed, the average daily sales for the year being taken as 100 (table 24).

TABLE 24. SEASONAL VARIATION IN SALES, 40 STORES
(Average daily sales for the year = 100)

Month	Index	Month	Index
January	103	July	84
February	111	August	85
March	115	September	84
April	134	October	83
May	125	November	87
June	88	December	101

The sales were largest during the time of heavy feeding in the winter and spring months. March, April, and May were the high months, due to the large sale of seed and fertilizer in addition to feed. The peak of sales was reached in April. The average index of sales for the period from December to May, inclusive, was 115, while the average for the months from June to November, inclusive, was 85.

Records of monthly sales, covering periods of five years and four years, respectively, were obtained from two stores (table 25). The sales of these stores were relatively larger in winter and relatively smaller in summer than those shown in table 24.

The monthly cash and credit sales were compiled separately in 26 stores. There was less seasonal variation in the cash sales than in the credit sales

TABLE 25. SEASONAL VARIATION IN SALES, 2 STORES
(Average daily sales for the year = 100)

	Store no. 48*	Store no. 19†
January	116	118
February	127	118
March	147	128
April	145	139
May	127	112
June	61	73
July	61	71
August	78	77
September	63	69
October	71	80
November	100	103
December	104	112

* Years 1920 to 1924, inclusive.
† Years 1921 to 1924, inclusive.

(table 26). This is probably due to the fact that cash customers tend to buy in smaller lots and more regularly throughout the year. The larger increase in credit sales in March, April, and May is probably due to the fact that the farmers are short of cash at that time of the year, when large purchases of seed, feed, and fertilizer are being made.

TABLE 26. SEASONAL VARIATION IN CASH AND CREDIT SALES, 26 STORES
(Average daily sales for the year = 100)

Month	Cash sales	Credit sales	All sales
January	97	104	102
February	105	113	111
March	105	123	118
April	113	147	138
May	112	131	126
June	94	82	85
July	96	78	83
August	100	74	81
September	90	77	81
October	92	81	84
November	95	84	87
December	101	106	104

Stores having a wide seasonal variation in sales must carry relatively large inventories during the winter and spring months.

Day-of-the-month variations

The cash and credit sales of two stores were compiled by days of the month. Both stores are located near milk plants where the farmers receive checks for their milk on the 25th of each month. The sales from the 25th of each month to the 3d of the following month, inclusive, averaged 10 per cent above normal, and sales during the period from the 15th to the

24th of each month, inclusive, averaged 7 per cent below normal, indicating that the farmers purchase more feed, both for cash and on credit, immediately following the date of payment for milk.

Day-of-the-week variations

Variations in sales by days of the week for the same two stores were calculated also. In both stores the sales were largest on Monday, were considerably below the average for the week on Thursday and Friday, and were about average on Tuesday, Wednesday, and Saturday. Apparently the larger buying on Monday is the result of the exhaustion of the supply on hand over Sunday. There was no striking difference between cash and credit sales with respect to day-of-the-week variation.

MARGINS

The distribution of 47 stores according to their gross margin in percentage of net sales is shown in table 27. The average gross margin of individual stores varied from 2.6 per cent to 18.1 per cent of the net sales. The

TABLE 27. DISTRIBUTION OF 47 STORES ACCORDING TO THEIR GROSS MARGIN IN PERCENTAGE OF NET SALES

Range of gross margin	Number of stores	Per cent of total number
(Per cent)		
2.6 to 5.0	3	6.4
5.1 to 7.5	8	17.0
7.6 to 10.0	9	19.1
10.1 to 12.5	9	19.1
12.6 to 15.0	7	14.9
15.1 to 17.5	10	21.3
Over 17.5	1	2.1
Total	47	100.0

variations in gross margin were due to differences both in purchase prices and in selling prices for the individual stores.

Retail prices

The extent of variation in the average retail prices charged by different stores is shown in table 28.

The highest average price received by any of these stores for corn-gluten feed in bulk was $2.50 per 100 pounds, and the lowest price was $2.08 per 100 pounds—a difference of 42 cents, or 19 per cent of the average price for all the stores. For all the important feeds, the variation between the highest and lowest average prices charged by different stores was greater than the usual margin between the wholesale and retail prices.

Retail prices at different feed stores vary according to the amount of competition, the cost of the feed delivered at the store, the basis upon which margins are figured, and other factors.

TABLE 28. VARIATION IN AVERAGE PRICES RECEIVED BY DIFFERENT STORES FOR CERTAIN FEEDS, PER 100 POUNDS, AT RETAIL, 36 STORES

	Average for all stores	Lowest average price	Highest average price	Difference between highest and lowest average price	
				Amount	Per cent of yearly average price
Corn-gluten feed (bulk)	$2.25	$2.08	$2.50	$0.42	19
Wheat bran (sacked)	1.75	1.57	1.90	0.33	19
Linseed-oil meal (sacked)	2.60	2.42	2.77	0.35	13
Cottonseed meal (sacked)	2.75	2.48	3.08	0.60	22
Ground oats (bulk)	2.23	1.95	2.41	0.46	21
Cornmeal (bulk)	2.30	2.12	2.53	0.41	18
Hominy (bulk)	2.24	1.98	2.53	0.55	25
24-per-cent dairy ration (sacked)	2.45	2.17	2.62	0.45	18

The effect of competition upon the retail prices of certain feeds is shown in table 29. The stores having the most competition obtained slightly lower prices than did those having less competition.

TABLE 29. AVERAGE CASH RETAIL PRICE OF CERTAIN FEEDS AT 36 STORES, GROUPED ACCORDING TO THE NUMBER OF COMPETITORS

Number of competitors	Number of stores	Average selling price			
		Corn-gluten feed	Wheat bran	Linseed-oil meal	Ground oats
0	9	$2.24	$1.79	$2.64	$2.24
1	8	2.30	1.78	2.61	2.24*
2	13	2.25	1.74	2.59	2.26
3	6	2.20	1.70	2.57	2.16

* Seven stores.

As is shown later, wide variations existed in the prices paid for feed by different stores. There was a tendency for the stores paying higher prices to charge higher prices to their customers, although this tendency was limited by competition (table 30).

Of the 67 stores from which definite information as to the method of fixing retail prices was obtained, 6 operated on a cost-plus basis; that is, they fixed, or at least attempted to fix, their retail prices at a certain margin above the prices paid for the feed. The other stores fixed their retail prices, within the limits set by competition, at a certain margin above current wholesale quotations or replacement cost.

An effort was made to ascertain the usual mark-up on feed by each of these 67 stores, but so much variation was found that it is impossible to

TABLE 30. AVERAGE CASH RETAIL PRICES OF CERTAIN FEEDS AT INDIVIDUAL STORES, GROUPED ACCORDING TO THEIR PURCHASE PRICES FOR THE SAME FEEDS

Average purchase price per 100 pounds	Average selling price per 100 pounds	Number of stores
Corn-gluten feed		
$1.81 to $1.90	$2.19	7
$1.91 to $2.00	2.23	8
$2.01 to $2.10	2.25	7
$2.11 to $2.20	2.33	5
$2.21 to $2.30	2.37	1
Average	$2.25	28
Wheat bran		
$1.11 to $1.20	$1.74	2
$1.21 to $1.30	1.77	5
$1.31 to $1.40	1.72	6
$1.41 to $1.50	1.77	9
$1.51 to $1.60	1.74	2
$1.61 to $1.70	1.79	2
Average	$1.76	26
Linseed-oil meal		
$1.81 to $2.00	$2.56	4
$2.01 to $2.20	2.52	5
$2.21 to $2.40	2.62	11
$2.41 to $2.60	2.67	4
$2.61 to $2.80	2.71	2
Average	$2.60	26
Hominy feed		
$1.71 to $1.90	$2.14	7
$1.91 to $2.10	2.27	7
$2.11 to $2.30	2.38	5
$2.31 to $2.50	2.24	2
Average	$2.25	21

present representative figures. For example, a number of dealers stated that they attempted to sell at from $3 to $4 per ton above the wholesale quotations, but that the actual selling prices were determined very largely by market conditions and competition. Of the 67 stores, 27 reported that their usual mark-up over the wholesale quotations was from $3 to $5 per ton, and 12 more reported a mark-up of 10 per cent, or about the same amount. However, the margins actually obtained varied according to replacement cost and competition.

Purchase prices

Kinds of feed purchased

In table 31 is given the quantity of each important feed purchased by 42 stores during 1924.

TABLE 31. QUANTITY OF EACH FEED PURCHASED BY 42 STORES

Kind of feed	Number of tons	Per cent of total quantity
Corn and cornmeal	15,351.9	22.2
Gluten	10,325.1	14.9
Gluten meal	186.4	0.3
Hominy	3,033.8	4.4
Corn and oats	1,217.4	1.8
Oats	6,961.0	10.1
Barley	468.0	0.7
Wheat	2,155.9	3.1
Bran	4,643.3	6.7
Middlings	1,932.6	2.8
Mixed feed	5,175.5	7.5
Red Dog	360.7	0.5
Flour middlings	272.2	0.4
Palmo middlings	100.0	0.1
Buckwheat	238.6	0.3
Buckwheat middlings	34.8	0.1
Cottonseed-oil meal	506.7	0.7
Linseed-oil meal	1,363.1	2.0
Beet pulp	181.4	0.3
Distillers' dried grains	151.5	0.2
Puraflax	212.8	0.3
Cereal feed	40.0	0.1
Alfalfa meal	76.4	0.1
Dairy rations	8,562.1	12.4
Scratch feed	2,251.6	3.3
Mash	1,478.8	2.1
Meat scrap	828.5	1.2
Chick feed	149.0	0.2
Shells	517.1	0.7
Other feeds	289.0	0.4
Total	69,065.2	100.0

Corn was by far the most important source of the feed handled by these stores, the various corn feeds constituting at least 50 per cent of the total when the corn content of ready-mixed dairy and poultry feeds is considered. Among the dairy feeds, cornmeal, gluten, hominy, bran, wheat, mixed feed, ground oats, linseed-oil meal, and cottonseed-oil meal were of outstanding importance. The ready-mixed dairy rations consisted chiefly of these ingredients.

Differences in prices paid by different stores

The extent of variation in average prices paid for certain feeds by different stores is shown in table 32. The highest average price paid for gluten feed by any store was $2.26 and the lowest price was $1.62, a difference of 64 cents, or 32 per cent of the average price for all stores. Similar or larger variations occurred in the case of other feeds. The stores differed more in respect to their buying prices than in respect to retail prices. This is due chiefly to the fact that there were wide variations in time of purchase,

TABLE 32. VARIATION IN AVERAGE PRICES PAID BY DIFFERENT STORES FOR CERTAIN FEEDS, PER 100 POUNDS

	Number of stores	Average for all stores	Lowest average price	Highest average price	Difference between highest and lowest average price	
					Amount	Per cent of yearly average price
Corn-gluten feed (bulk)	40	$2.00	$1.62	$2.26	$0.64	32
Wheat bran (sacked)	38	1.41	1.11	1.67	0.56	40
Linseed-oil meal (sacked)	37	2.26	1.83	2.66	0.83	37
Cottonseed meal (sacked)	33	2.47	1.99	2.77	0.78	32
Oats (bulk)	38	1.94	1.62	2.53	0.91	47
Corn (bulk)	39	1.86	1.46	2.19	0.73	39
Hominy (bulk)	37	2.01	1.73	2.50	0.77	38
Wheat (bulk)	39	2.43	1.54	2.95	1.41	58
Mixed feed (sacked)	37	1.68	1.31	1.83	0.52	31

while there was little difference between the stores as to the time of sale, the sales of all stores being distributed throughout the year in similar fashion.

Differences in the average purchase prices of individual stores are due to differences in method of buying, freight rates, time of buying, and quality of the feed.

Method of purchase

There are three main sources of supply for retail dealers: (1) manufacturers; (2) local wholesale or mixed-car houses; (3) brokers handling both straight and mixed cars.

The large manufacturers of concentrated feeds are located mainly in Buffalo and to the west and south, with the exception of plants at Edgewater, New Jersey, and at a few other eastern points. The manufacturers sell either directly through their own organizations, or through brokers.

The wholesale or mixed-car houses usually buy in straight cars and process the feed or split up the shipments, sending them out again in mixed-car lots for the benefit of the retailers who cannot handle straight cars of feed. They often manufacture dairy rations under their own brand. Usually their plants are located at points where two or more railroads meet, and from which a mill-in-transit privilege can be used to advantage. As most of the feed moves from west to east, the greater proportion of the business done by these firms is east of their plants.

The broker does not actually handle the feed, but obtains quotations from manufacturers and sends quotations to retailers. He may either buy the feed outright and take the risk himself, or simply act as agent for the seller, bringing the buyer and the seller together. Practically all the feed sold through brokers is handled in straight cars.

Most of these agencies send out daily quotations, subject to acceptance before a specified time. This provision protects the wholesaler or the broker in case of a sharp advance in the market.

In addition to the price quotations issued by the trade, the United States Department of Agriculture, in *Crops and Markets*, gives feed prices at several important feed centers, and the New York State Department of Farms and Markets publishes a weekly feed letter. Some trade publications, such as the *Northwestern Miller* and *Flour and Feed*, give information on production and prices of feed. The Bureau of Foreign and Domestic Commerce of the United States Department of Commerce also publishes figures on the exports and imports of certain feedstuffs.

Feed shipped by manufacturers and wholesalers is billed with arrival draft attached to the bill of lading. The draft must be paid by the retailer before opening the car. It is necessary, therefore, for him to have either a considerable cash reserve or a line of credit such that he can borrow the necessary funds to take up the draft promptly when the feed arrives. Otherwise, he may have a heavy demurrage expense and be unable to keep sufficient supplies of feed on hand.

Some manufacturers, to provide outlets for feed in a heavy manufacturing period when sales are light and storage capacity may not be sufficient, sell on a so-called "season shipment" basis. These sales are made at reduced prices, the manufacturer having the privilege of shipping the feed at any time before the end of the calendar year. This method of selling enables a manufacturer with limited storage facilities to avoid heavy accumulation of feed in storage when production exceeds current sales. The retailer, however, does not know when the feed will be shipped, so can purchase only a part of his requirements on this basis. Some manufacturers, when the market has advanced, do not make shipment, but settle for the difference between the contract price and the market price on December 31.

The usual practice of the retail stores is to buy in straight cars whenever possible, since about $2 a ton may be saved in this way. Retail dealers can often buy straight cars at reduced prices on temporary market declines. Wheat products, such as wheat bran, wheat middlings, wheat mixed feed, and flour, all go at a straight-car price if the car contains wheat products only.

Some of the smaller stores buy feed largely in mixed cars, since their volume of business does not justify the purchase of full carloads of each kind of feed. The smaller stores can obtain a more rapid turnover of inventories and can carry a wider variety of goods by buying in mixed cars.

The average proportion of feed bought in straight cars by 35 stores for which this information was ascertained was 71 per cent. Two-thirds of the stores bought half or more of their feed in straight cars.

Where no bulk-storage facilities are available in the warehouse, the dealer must either buy his goods sacked or sack them in the car after they arrive. The high price of new sacks has given an added impetus to buying feed in bulk. This gives the dealer an opportunity to use old sacks which can be bought locally. Corn, oats, wheat, gluten, and hominy are commonly shipped in bulk. Some stores buy linseed-oil meal and dairy rations in bulk, thereby making considerable savings. Most stores do not use enough linseed-oil meal to buy in this manner, but many stores could buy proprietary dairy feeds in this way. The several cars of bulk dairy feed which the writer has been able to inspect at their destination, seem to have arrived

in very good condition with practically no stratification. These dairy feeds contained molasses, which probably was a great factor in holding together the light and the heavy ingredients of the mixture. Some difficulty might be encountered in transferring the feed from the car to the bin, particularly if the elevator delivery spout was near the top of the bin. The feed might have a tendency to separate in falling, the lighter and coarser particles going to the outside, and the finer, heavier particles remaining in the center. This might cause the feed to differ in analysis and feeding content in different parts of the bin. This difficulty would be avoided if the feed were sacked in the car, or an adjustable spout in the bin would prevent separation where the feed is unloaded directly.

Freight rates

The car-lot freight rate on feed from Buffalo to the stations of individual stores included in this study varied from $2.60 to $4.30 per ton. Other conditions being equal, the cost of feed delivered at the stores would vary directly with the freight rate. However, the average cost of feed delivered at the stores was influenced so much by other factors, such as the time of purchase, and whether the feed was bought in sacks or in bulk, that no definite relation between freight rates and the purchase or the selling price of the different feeds is shown by the figures available.

Time of purchase

The monthly wholesale prices of several important feeds during 1924 are given in table 33. The monthly wholesale prices of bran varied from

TABLE 33. AVERAGE MONTHLY WHOLESALE PRICES OF CERTAIN FEEDS IN STRAIGHT CARS, AT UTICA, NEW YORK*

(Dollars per ton, in sacks)

Month	Bran	Gluten	Cottonseed meal	Ground oats
January	$33.71	$45.80	$54.33	$40.99
February	32.42	42.30	51.46	42.04
March	30.75	40.80	50.63	41.43
April	29.79	37.38	50.04	42.26
May	25.42	36.88	50.25	42.13
June	27.11	41.30	53.17	43.67
July	30.83	43.58	55.29	45.76
August	32.38	44.97	54.83	44.04
September	31.75	47.20	52.08	40.98
October	32.92	46.53	51.63	43.25
November	33.79	45.53	49.88	43.37
December	38.48	46.17	49.25	47.16
Average for year	$31.61	$43.20	$51.90	$43.09

* Farm economics, no. 35, p. 473, 474, 476, 479, June, 1926.

$25.42 in May to $38.48 in December; gluten prices varied from $36.88 in May to $47.20 in September; cottonseed meal from $49.25 in December to $55.29 in July; and ground oats from $40.98 in September to $47.16 in December. Obviously the time of purchase was the most important factor affecting the cost of the feed.

Wholesale prices of feed are governed by supply and demand. Both of these factors vary with the season, so that there is a normal seasonal variation for each kind of feed. Seasonal variations in the wholesale prices of bran, gluten, cornmeal, and cottonseed-oil meal are shown in figures 9 and 10.[3]

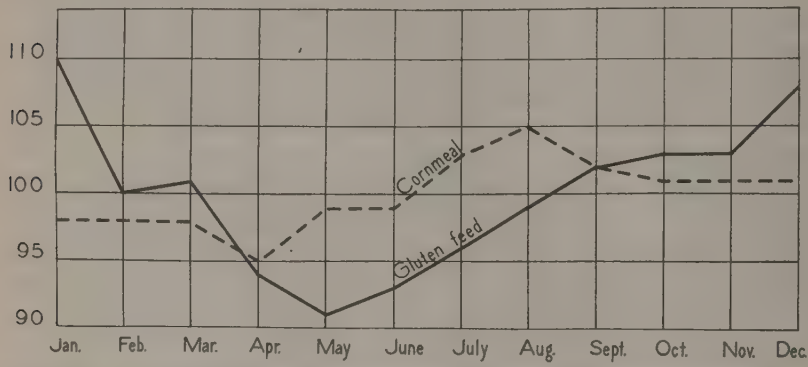


FIGURE 9. SEASONAL VARIATION IN THE WHOLESALE PRICES OF GLUTEN FEED AND CORN MEAL, 1921 TO 1925 (AVERAGE PRICES FOR THE 5-YEAR PERIOD = 100)

The price of gluten feed was lowest in May. Apparently it was profitable for retailers to "stock up" on gluten at this time of year. Prices during the months of largest retail sales (October to March) averaged about 14 per cent above the May price

The price of cornmeal was lowest in April but there was less advantage in forward buying of this feed. Prices during the period of heavy retail sales (October to March) averaged about 5 per cent higher than the April price

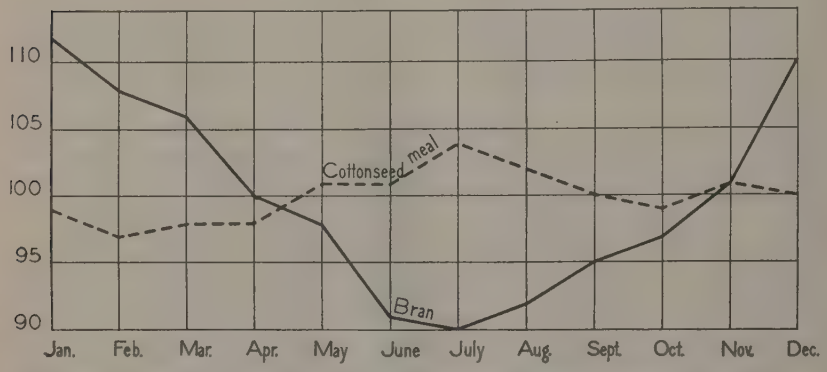


FIGURE 10. SEASONAL VARIATION IN THE WHOLESALE PRICES OF WHEAT BRAN AND COTTONSEED MEAL, 1921 TO 1925 (AVERAGE PRICES FOR THE 5-YEAR PERIOD = 100)

The price of bran was lowest in July. Prices during the months of largest retail sales (October to March) averaged 17 per cent above the July price

The price of cottonseed meal was lowest in February and highest in July

[3] These charts were prepared from data given by G. F. Warren and F. A. Pearson, in *Farm Economics*, no. 35, p. 487, June, 1926.

Competition tends to reduce the amount of seasonal variation to the equivalent of the carrying charges from the season of low prices to the season of high prices. However, there has been greater seasonal variation in the prices of most feeds in recent years than formerly. During the five-year period from 1921 to 1925, apparently it would have been profitable to stock up on cornmeal and hominy in April, gluten in May, linseed-oil meal in June, bran in July, and oats in September. There was not sufficient seasonal variation in the prices of cottonseed meal, wheat mixed feed, dried beet pulp, or meat scrap, to justify the placing of advance orders in any particular month.

Besides the normal seasonal variations, the wholesale prices of feed are affected also by the production of corn, oats, wheat, cotton, flax, and other crops that are the source of commercial feeds, and by the price of milk and eggs. These factors need to be taken into consideration in judging whether the price of any particular feed is likely to advance or decline. Index numbers of feed prices are useful in showing whether these prices are relatively high or low at any time. Index numbers of the monthly prices of certain feeds are given in table 34.

TABLE 34. INDEX NUMBERS OF PRICES OF CERTAIN FEEDS, IN SACKS IN STRAIGHT CARS, AT UTICA, NEW YORK*

(Corresponding months 1910–1914 = 100)

Year and month	Corn-meal	Gluten	Bran	Ground oats	Cotton-seed meal	Linseed-oil meal
1921	114	139	104	114	140	127
1922	107	137	117	106	165	156
1923	138	164	136	121	168	149
1924	155	150	127	134	159	141
1925	164	149	134	127	149	143
1926:						
January	142	150	134	127	132	151
February	136	138	123	118	132	144
March	133	132	116	116	130	142
April	129	135	129	116	127	157
May	120	138	124	111	127	154
June	121	140	125	110	127	154
July	132	150	128	111	129	160
August	125	135	118	114	120	150
September	119	128	118	119	116	142
October	126	127	125	133	110	145
November	123	122	128	128	109	146
December	135	117	138	136	110	147
1927:						
January	138	123	132	135	118	147
February	138	126	133	128	132	148
March	138	132	132	127	133	152
April	135	127	138	129	129	155
May	149	134	142	138	134	159
June	160	153	146	131	143	162
July	157	149	141	124	140	160
August	154	131	137	124	134	151

* From data given by G. F. Warren and F. A. Pearson in *Farm Economics*, no. 36, p. 512, August, 1926 and no. 47, p. 760, September, 1927.

In December, 1926, gluten feed at $34.65 per ton was only 17 per cent above the pre-war prices, whereas cornmeal was 35 per cent above the pre-war prices and most other feeds were selling on a higher level than gluten compared to their pre-war prices. In such a case the chances of a rise in price are much greater than the chances for decline. Similarly, the prices of ground oats and of wheat bran were unusually low in August, 1926, and the price of cottonseed meal was out of line in October, November, and December, 1926.

OPERATING EXPENSES

The principal items of expense were salaries and wages, land, building, and equipment expense, interest, and bad debts.

Salaries and wages

The average amount of salaries and wages for 47 stores was $4380.79, or 5 per cent of the net sales. The variation in this ratio was from 1.7 per cent to 11.7 per cent. In table 35 are given the variations in the salaries and wages, expressed in percentage of net sales.

TABLE 35. SALARIES AND WAGES, EXPRESSED IN PERCENTAGE OF NET SALES, 47 STORES

Range of net sales	Number of stores	Per cent of total number
(Per cent)		
1.0 to 2.9	7	14.9
3.0 to 4.9	17	36.2
5.0 to 6.9	15	31.9
7.0 to 8.9	7	14.9
9 or more	1	2.1
Total	47	100.0

In half the stores, salaries of managers made up from 40 to 60 per cent of the total salaries and wages (table 36). In 14 stores, the manager's salary made up more than 60 per cent of the total salaries and wages.

TABLE 36. PERCENTAGE THAT MANAGER'S SALARY CONSTITUTED OF TOTAL SALARIES AND WAGES, 47 STORES

Per cent of total salaries and wages	Number of stores		
	Stores with hired managers	Stores with owner-managers	All stores
20.1 to 40	4	6	10
40.1 to 60	8	15	23
60.1 to 80	4	5	9
80.1 to 100	3	2	5
Total	19	28	47

Land, building, and equipment expense

Land, building, and equipment expense, not including interest, constituted 1.1 per cent of the net sales of the 47 stores included in table 18 (page 25). In table 37 the items of land, building, and equipment expense, including interest, are shown for 34 stores owning their own buildings. The total land, building, and equipment expense of these stores amounted, on the average, to 1.8 per cent of their net sales. Interest was the largest item, making up 35.9 per cent of the total; depreciation constituted 30.1 per cent; taxes, 12.4 per cent; repairs, 10.7 per cent; insurance, 8.2 per cent; and rent, 2.7 per cent. Part of the rent was for railroad land on which the buildings stood, and the rest was for additional warehouse space. Any rent received for use of land or buildings was deducted from land, building, and equipment expense.

TABLE 37. ITEMS OF LAND, BUILDING, AND EQUIPMENT EXPENSE, 34 STORES OWNING BUILDINGS

	Land and buildings		Warehouse equipment		Furniture and fixtures		Total	
	Amount	Per ceht of total	Amount	Per cent of total	Amount	Per cent of total	Amount	Per cent of total
Rent	$ 46.68	4.1	.....	.....	.....	.....	$ 46.68	2.7
Depreciation	228.59	20.0	$243.84	48.7	$47.95	58.9	520.38	30.1
Taxes	214.02	18.7	.....	.....	.....	.....	214.02	12.4
Repairs	79.03	6.9	105.39	21.1	0.40	0.5	184.82	10.7
Insurance	117.74	10.3	20.06	4.0	3.06	3.8	140.86	8.2
Interest	458.89	40.1	130.91	26.2	29.96	36.8	619.76	35.9
Total	$1,144.95	100.0	$500.20	100.0	$81.37	100.0	$1,726.52	100.0

The land and building expense alone, with interest, for 43 stores, including both those owning buildings and those not owning buildings, amounted to an average of 1.2 per cent of the net sales (table 38). For the 34 stores owning buildings the land and building expense amounted to 1.4 per cent, while for the 9 stores renting buildings the expense was 0.8 per cent, of the net sales. The figure for the 12 cooperatives owning buildings was 1 per cent, as compared with 1.6 per cent for the 22 private dealers owning buildings. The high ratios of land and building expense may be due either to an expensive plant or to a small volume of business. Once the plant is established, these expenses are relatively fixed.

TABLE 38. RATIO OF LAND AND BUILDING EXPENSE TO NET SALES, 43 STORES

	Cooperatives		Private dealers		All stores	
	Number of stores	Average per cent land and building expense is of net sales	Number of stores	Average per cent land and building expense is of net sales	Number of stores	Average per cent land and building expense is of net sales
Owning buildings	12	1.0	22	1.6	34	1.4
Renting buildings	1	0.4	8	0.8	9	0.8
Total	13	0.9	30	1.4	43	1.2

Sales per dollar invested in land and buildings

The average amount of sales per dollar invested in real estate for 41 stores was $16.22. The average for 14 cooperative stores was $20.01, and for 27 privately operated stores $14.26. Variations in this ratio are shown in table 39.

TABLE 39. SALES PER DOLLAR INVESTED IN LAND AND BUILDINGS, 41 STORES

Sales per dollar invested	Cooperatives		Private dealers	
	Number	Per cent of total number	Number	Per cent of total number
$10 or less	2	14.3	11	40.7
$10.01 to $20.00	6	42.9	9	33.3
$20.01 to $30.00	2	14.3	4	14.8
$30.01 or more	4	28.6	3	11.1
Total	14	100.0	27	100.0

Power and equipment expense

It is shown in table 37 (page 43) that the average warehouse-equipment expense of 34 stores owning buildings was $500.20. Power machinery was included with warehouse equipment, but purchased power, gasoline, oil, and other power supplies, were included under power. The average power expense of the 34 owned stores was $288.65. The combined expense for power and equipment was $788.85 per store, or 0.8 per cent of the net sales.

In most cases the expense for furniture and fixtures was small. Only 11 stores had a furniture and fixture expense amounting to more than $100, and in no case did this item constitute more than 0.3 per cent of the net sales.

The most common rate of depreciation on warehouse and power equipment was 10 to 15 per cent. The highest rate was 25 per cent. The most common rate of depreciation reported on furniture and fixtures was 10 per cent. These rates varied from 5 to 20 per cent.

Other expenses

Only 4 stores had delivery expenses amounting to 1 per cent or more of their net sales, the average for all the stores being 0.3 per cent.

Losses from bad debts averaged $915.18 for the cooperative stores, and $678.23 for the privately operated stores (table 18, page 25). The ratio of bad debts to net sales was 1 per cent for the cooperative stores, and 0.8 per cent for the privately operated stores.

Interest, including that paid on borrowed money and that on the average net worth, averaged $2046.99, or 2.3 per cent of the net sales.

Total operating expense

The average total operating expense for 47 stores was $9377.70, or 10.6 per cent of the net sales (table 18). The total operating expense constituted 9.3 per cent of the net sales of the cooperative stores, and 11.2 per cent of the net sales of the privately operated stores.

NET OPERATING INCOME

The average net operating income of the 47 stores included in table 18 (page 25) was $904.67, or about 1 per cent of the net sales. Of these stores, 16 failed to earn enough to cover expenses, including interest on the owners' capital and salaries for the proprietors estimated at what they would have had to pay a hired manager to do the same work.

Rate of return on capital

The rate of return on total capital used was found by deducting all expenses, except interest, from the gross margin, and dividing the resulting figure by the average of the total assets at the beginning and at the end of the year. Salaries of the owner-managers were included in the expenses at the estimated cost of hiring a person to do the same work.

The average rate of return was 8.7 per cent, the highest being a gain of 31.7 per cent and the lowest a loss of 19.9 per cent. Variations in the rate of return are shown in table 40.

TABLE 40. VARIATIONS IN RATE OF RETURN ON TOTAL CAPITAL, 47 STORES

Rate of return on total capital	Number of stores	Per cent of total number
(Per cent)		
−20 to −10	2	4.3
− 9 to 0	7	14.9
+ 1 to +10	18	38.3
+11 to +20	14	29.8
+21 to +30	4	8.5
+31 to +40	2	4.3
Total	47	100.0

Rate of return on net worth

The rate of return on owned capital, or net worth, was found by deducting all expenses, except interest on net worth, from the gross margin and dividing the remainder by the average net worth. Of the 47 stores, 4 had no net worth. The average rate of return on the net worth of the remaining 43 stores was 13.9 per cent, the highest being a gain of 100.8 per cent and the lowest a loss of 49.2 per cent. Variations in the rate of return on net worth are shown in table 41.

TABLE 41. VARIATIONS IN RATE OF RETURN ON OWNED CAPITAL, OR NET WORTH, 43 STORES

Rate of return on owned capital	Number of stores	Per cent of total number
(Per cent)		
−10 or less	4	9.3
− 9 to 0	5	11.6
+ 1 to +10	8	18.6
+11 to +20	13	30.2
+21 to +30	8	18.6
+31 or more	5	11.6
Total	43	100.0

FACTORS AFFECTING MARGINS, EXPENSES, AND INCOME

Volume of business

Volume of business appears to be the most important factor affecting the operation of the stores. The average net sales of 22 stores that did grinding were $103,371.05 (table 42). As the sales increased, the percentage of net sales represented by gross margin and by operating income increased, sales per man unit and rate of inventory turnover increased, and salaries and wages, and total expense, decreased.

The average net sales of 22 stores that did no grinding were $75,796.23. As the sales increased, the percentage represented by gross margin, and salaries and wages, decreased. The smaller stores also had a much higher percentage of total expense. Operating income was largest for stores doing a moderate volume of business.

TABLE 42. RELATION OF VOLUME OF SALES TO MARGINS, EXPENSES, AND OPERATING INCOME, 44 STORES*

	Amount of net sales			
	$60,000 or less	$60,000 to $100,000	Over $100,000	All stores
	22 stores that did grinding			
Number of stores	7	5	10	22
Average net sales	$48,153.45	$87,699.87	$149,858.95	$103,371.05
In per cent of net sales:				
Average gross margin	10.7	11.9	14.6	12.7
Salaries and wages	6.1	5.5	5.5	5.7
Total expense	13.3	12.3	12.0	12.5
Operating income	−2.6	−0.5	+2.7	+0.3
Sales per man unit	$26,335.67	$32,027.54	$32,895.91	$30,611.20
Capital turnover	2.6	2.7	2.6	2.6
Inventory turnover	8.6	9.0	10.9	9.7
Rate of return on total capital	−0.8	+6.9	+15.3	+8.3
	22 stores that did no grinding			
Number of stores	9	9	4	22
Average net sales	$50,264.30	$72.858.33	$139,853.34	$75,796.23
In per cent of net sales:				
Average gross margin	10.6	8.5	7.7	9.2
Salaries and wages	5.4	3.7	3.2	4.3
Total expense	11.1	7.0	7.1	8.7
Operating income	−0.4	+1.5	+0.7	+0.5
Sales per man unit	$24,638.93	$46,915.91	$40,391.14	$36,616.28
Capital turnover	2.3	4.3	4.2	3.7
Inventory turnover	9.9	10.7	13.1	10.8
Rate of return on total capital	7.9	13.0	7.4	9.9

* Three stores were omitted from these tabulations because their inventories were taken at a different season of the year.

The reason why the percentage of gross margin increased with larger sales for stores doing grinding, is that these stores were better able to make

savings by purchasing straight cars of bulk feed and by mixing their own rations. There is no apparent reason why the gross margin decreased with increasing sales for stores that did no grinding. Had the gross margin remained constant, the operating income would have shown a more marked increase with larger sales.

Inventory turnover

The average inventory of merchandise for 44 stores on December 31, 1924, was $9058.11, the range being from $1197.38 to $27,893.27. The inventory turnover for these stores was computed by dividing the cost of merchandise sold during the year by the average inventory at the beginning and the end of the year. The average frequency of turnover was 10.3 times a year. The range was from 4.2 to 41.5 times. The average for cooperative stores was 11.9, and the average for private stores was 9.9. The average frequency of inventory turnover for 22 stores that did grinding was 9.7 times a year. The average frequency of inventory turnover for the stores that did no grinding was 10.8. In both cases, as the frequency of inventory turnover increased, the percentage of net sales represented by gross margin and operating expenses decreased, and the percentage of operating income increased (table 43). Sales of stores that did grinding remained relatively constant, regardless of frequency of inventory turnover; but for the stores that did no grinding, sales increased with greater frequency of inventory turnover.

TABLE 43. RELATION OF FREQUENCY OF INVENTORY TURNOVER TO MARGINS, EXPENSES, AND OPERATING INCOME, 44 STORES

	Number of inventory turnovers per year			
	Less than 7.0	7.1 to 12.0	Over 12.0	All stores
	22 stores that did grinding			
Number of stores	10	8	4	22
Average number of turnovers	5.7	8.8	21.7	9.7
Average net sales	$110,153.75	$91,498.71	$110,158.98	$103,371.05
In per cent of net sales:				
Average gross margin	13.8	12.9	9.7	12.7
Salaries and wages	6.3	5.5	4.7	5.7
Total expense	14.1	12.3	8.8	12.5
Operating income	−0.3	+0.6	+0.9	+0.3
	22 stores that did no grinding			
Number of stores	6	7	9	22
Average number of turnovers	5.8	10.1	14.7	10.8
Average net sales	$58,506.76	$72,872.98	$89,596.18	$75,796.23
In per cent of net sales:				
Average gross margin	11.3	9.1	7.9	9.2
Salaries and wages	5.6	4.6	3.2	4.3
Total expense	11.9	9.0	6.3	8.7
Operating income	−0.6	+0.1	+1.6	+0.5

Capital turnover

The rate of capital turnover was found by dividing the net sales for the year by the average total assets of each store at the beginning and at the end of the year. The average frequency of capital turnover was 3.2 times a year, the highest frequency being 7.6 times while the lowest was 0.6 time. These figures show the ratio of sales to the amount invested in the business. As the rate of capital turnover increased, the percentage of net sales represented by interest and by total expense decreased (table 44). The stores whose sales were less than twice the investment made a very poor showing in operating income. The advantage of a large ratio of sales to investment would appear more marked, had not the stores with most frequent capital turnover happened to have smaller gross margins than the other stores.

TABLE 44. RELATION OF FREQUENCY OF CAPITAL TURNOVER TO OPERATING EXPENSES AND INCOME, 44 STORES

	Number of capital turnovers per year			
	Less than 2.0	2.1 to 3.0	Over 3.0	Total
Number of stores	12	15	17	44
Average capital turnover	1.6	2.6	4.9	3.2
Average net sales	$76,873.83	$93,125.84	$95,429.79	$89,583.64
In per cent of net sales:				
Interest	3.9	2.4	1.3	2.4
Total expense	15.3	10.2	7.5	10.6
Operating income	−3.0	+2.6	+0.9	+0.4

CREDIT

One of the most important features in the management of any retail business is the handling of credit. This phase of the business hardly receives the attention which it deserves, few of the dealers realizing the actual cost of extending credit.[4] Many stores carry accounts which are never balanced from one year's end to another.

PERCENTAGE OF CREDIT SALES

Credit was extended on 62 per cent of the sales by cooperative stores and on 75 per cent of the sales by privately operated stores. The percentage of credit business was not affected by the volume of sales (table 45).

LENGTH OF TIME FOR WHICH CREDIT IS EXTENDED

The number of days credit sales on the books at the end of the year averaged 58 days for the cooperative stores and 75 days for the privately operated stores. Of the privately operated stores, those doing the larger volume of business collected their accounts more promptly (table 45).

Satisfactory estimates were obtained from 29 dealers as to the percentages of book accounts that ran for various periods of time before collection. A summary of these estimates is given in table 46.

[4] Costs of extending credit by feed stores and other country stores are given by Leland Spencer in Bulletin 430 of the Cornell University Agricultural Experiment Station (1924).

TABLE 45. RELATION OF VOLUME OF BUSINESS TO PERCENTAGE OF CREDIT SALES

Net sales	Number of stores	Per cent of business credit	Number of days credit sales on books
	14 cooperative stores		
Under $60,000	4	65.7	64
$60,000 to $100,000	5	47.2	50
Over $100,000	5	74.1	60
Average for the group	14	62.1	58
	33 privately operated stores		
Under $60,000	12	72.9	92
$60,000 to $100,000	12	76.1	78
Over $100,000	9	76.3	66
Average for the group	33	75.0	75
	All stores		
Under $60,000	16	71.1	85
$60,000 to $100,000	17	67.6	72
Over $100,000	14	75.5	64
Average for the group	47	71.1	70

TABLE 46. PERCENTAGE OF BOOK ACCOUNTS THAT RUN FOR VARIOUS PERIODS OF TIME

Length of time before collection	Per cent of accounts
10 days or less	4.6
11 to 30 days	45.3
31 to 60 days	23.0
2 to 6 months	11.8
Over 6 months	15.3

Practices in different stores and in different communities varied widely, some stores being on a strict 30-day basis while others let their accounts run indefinitely. Some dealers who used the McCaskey system had more than a year's slips on the register, these accounts not having been checked or completely settled for more than a year.

Only 14 out of 44 stores giving the information made a practice of sending regular monthly statements to customers having charge accounts; 2 others sent statements occasionally. There were 8 stores which charged interest on accounts after 30 days. Only 4 stores reported the use of formal collection letters, and 4 others the use of an outside collection agency.

Practically all the dealers visited used notes as a means of stimulating the collection of old accounts. Some dealers requested notes from customers only when they found themselves short of capital. On the average, 9 per cent of the book accounts were settled by notes.

Three months was the usual term of notes. Some dealers toward the summer season required one-month notes in order that they might be paid off more promptly.

Practice in handling notes varied considerably. Of the 48 stores giving information on this point, 33 discounted all their notes at the bank, 9 did not discount any, and 6 reported that some notes were discounted. In all cases in which the bank discounted the notes, indorsement by the dealer was required. Discounting the notes relieves the dealer from carrying the amount of the note but still leaves him a contingent liability, which he must be prepared to meet if the maker of the note fails to pay it at maturity.

The stores reported that most of the notes given by customers were renewed several times. The average number of renewals reported by 44 stores varied from one to twelve.

Most of the stores reported that comparatively few of their customers failed to take care of their notes when due. However, a few stores reported that a large proportion of their notes were not taken care of on time. The farmer, in many cases, does not realize the trouble caused by failure to look after a discounted note when due.

In one community in which the bank was reorganized a few years ago because it was carrying so much overdue paper, the present management of the bank has so changed the attitude of the farmers toward notes that all three dealers in the community report no difficulty from notes running past maturity. Few banks or stores like to allow notes to go to protest, as the farmer is often reluctant to pay the fee. In consequence, it seems to be current practice for the bank simply to charge the amount plus interest to the dealer's account if the note is not paid or renewed at maturity. In one community the manager reported that notes were deposited in the same manner as checks and that no difficulty was experienced through farmers not taking care of them.

The relation of the term of credit to the efficiency of the stores is shown in table 47. The stores that collected their accounts most promptly took smaller margins, yet they had larger net incomes than the other stores because their expenses were less.

TABLE 47. RELATION OF THE TERM OF CREDIT TO SALES, MARGINS, EXPENSES, AND NET INCOME

	Average term of credit		
	60 days or less	61 to 120 days	Over 120 days
Number of stores	19	16	12
Average net sales	$90,423.35	$100,546.13	$68,514.45
Inventory turnover	11.9	10.4	7.6
In per cent of net sales:			
Salaries and wages	3.8	5.4	6.9
Building and equipment expense	0.9	1.1	1.6
Bad debts	0.5	0.7	1.5
Interest	1.4	2.4	4.0
Total expense	7.6	10.9	15.8
Gross margin	9.3	12.1	12.7
Operating income	+1.7	+1.2	−3.1

AMOUNT OF CREDIT CARRIED

The average amount of credit carried by 14 cooperative stores was $10,815.97, or 36.4 per cent of their total capital (table 48). This amount was equivalent to the average sales over a period of 37 days. Of the total credit carried, $9748.47 was in book accounts and $1067.50 in notes.

TABLE 48. AMOUNT OF CREDIT CARRIED BY 47 STORES

	14 cooperative stores	33 privately operated stores
Average amount of book accounts	$9,748.47	$14,514.38
Average amount of notes*	$1,067.50	$1,317.52
Total credit carried*	$10,815.97	$15,831.90
Per cent of total capital thus employed	36.4	44.0
Number of days sales outstanding	37	56

* Not including the amount of notes discounted at the bank.

The average amount of credit carried by the privately operated stores was $15,831.90, or 44 per cent of their total capital. The amount outstanding was equivalent to the average sales over a period of 56 days. Of the total credit carried by the dealers, $14,514.38 was in book accounts and $1317.52 in notes.

Notes that had been discounted by the stores are not included in the foregoing amounts, as it was impossible to get a satisfactory record of the amount of such notes.

SEASONAL VARIATION IN CREDIT

Seasonal variation in the accounts and notes receivable for one store from 1914 to 1925 was computed. The index of seasonal variation is shown in table 49. The amount outstanding was greatest in April, May, and June, with the peak in May. The peak occurred one month later than the month of greatest sales for the 40 stores shown in table 24 (page 31).

TABLE 49. SEASONAL VARIATION IN ACCOUNTS RECEIVABLE FOR ONE STORE FROM 1914 TO 1925*

(Average monthly accounts receivable = 100)

Month	Index	Month	Index
January	91	July	106
February	99	August	96
March	105	September	87
April	116	October	84
May	125	November	84
June	122	December	85

* The years 1919, 1920, and 1921 are omitted.

SIZE OF ACCOUNTS

An analysis of the accounts receivable of 6 stores, showing the variation in number and size of the accounts, is given in table 50. The size of individual accounts depends on the credit management as well as on the volume of buying by the customer. An analysis of the accounts is necessary to supplement such a study in order to see what types of patrons are included in each classification.

TABLE 50. DISTRIBUTION OF THE CHARGE ACCOUNTS OF 6 FEED STORES ACCORDING TO SIZE, DECEMBER 31, 1924*

Class	Store no.						Average of the 6 stores
	31	28	35	39	48	62	
	Per cent of total number of accounts						
$100 or less	54.4	66.7	82.7	96.3	72.5	67.8	75.3
$101 to $200	23.9	16.7	13.3	3.0	9.8	14.8	12.1
$201 to $300	6.5	4.7	3.0	0.7	7.8	4.4	4.5
$301 to $400	6.5	4.7	1.0	.....	3.3	2.0	2.4
$401 to $500	6.5	1.2	.....	.....	2.0	2.0	1.5
$501 to $1,000	2.2	6.0	.....	.....	2.7	6.0	3.1
$1,001 to $1,500	.....	.....	.....	.....	1.9	1.5	0.8
$1,501 to $2,000	.....	.....	.....	.....	.....	0.5	0.1
$2,001 to $2,500	.....	.....	.....	.....	.....	0.5	0.1
$2,501 to $3,000	.....	.....	.....	.....	.....	0.5	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average amount per account	$136.77	$112.96	$59.26	$51.72	$117.95	$166.40	$111.66

* The stores are arranged in order of the number of accounts outstanding.

SUMMARY

The study reported in this bulletin included in all 70 retail feed stores, of which 20 were cooperative and 50 were privately operated. Detailed records of the business operations of 47 of these stores were obtained, covering the year 1924.

The average net sales per store for the 47 stores were $88,275.64, and the cost of the merchandise sold was $77,993.27, leaving a margin of $10,282.37, or 11.6 per cent of the sales. The expenses of operation were $9377.70 per store, or 10.6 per cent of the sales, leaving a net income of $904.67, or 1 per cent of the sales. The average rate of return on the total investment was 8.7 per cent, or 13.9 per cent on the net worth of the owners.

There was little difference between the cooperative and the privately operated stores except that the latter obtained a larger gross margin and had larger expenses.

Salaries and wages constituted nearly half the total expense. Interest, land, building, and equipment costs, and bad debts, were the other important items of cost.

About half of the stores did some grinding of feed in addition to the usual merchandising business. These stores did a larger volume of business and had a much larger investment than the other stores. The stores that did grinding obtained larger gross margins but also had larger expenses than the other stores. The stores that did no grinding were slightly more profitable to the proprietors.

A reasonably large volume of business appeared to be the most important factor for success in the retail feed business. Of the stores that did grinding, most of those having sales of $100,000 or less for the year failed to pay expenses. Of the stores that did not do grinding, most of those with sales under $60,000 lost money. All but two of the stores with sales exceeding $60,000 made a profit. A relatively large volume of business permits of more economical buying, since more of the feed and other commodities can be purchased in straight cars.

In general, the larger stores had a lower ratio of expenses to sales. Both labor and capital were used more efficiently by the stores doing a large volume of business. A rapid turnover of inventories and total capital, and large sales per man employed, were directly correlated with profits.

A convenient arrangement of the warehouse reduces the labor requirements in a feed store. Stores that are located on a railroad siding so that labor-saving devices can be used for unloading the cars, have an important advantage over other stores.

Both cooperative and privately operated stores extended credit on a large percentage of their sales. Outstanding accounts and notes (not including those discounted at banks) constituted 36 per cent of the total capital of the cooperative stores and 44 per cent of the capital of the privately operated stores.

About half of the customers' accounts were collected within a month, but many were permitted to run for a year or longer. The credit service constitutes an added cost of doing business, which is taken account of only in part in the discounts offered for cash and in the interest charges on book accounts and notes.

Economical buying of feed and other merchandise is undoubtedly a very important part of the management of a retail feed store. Wide variations were found in the prices paid by different stores for the same kind of feed. These variations were due chiefly to differences in the time of buying. While there are no foolproof guides to the proper time of purchase, it is believed that advantage may be gained from the normal seasonal variations in the wholesale prices of some feeds, and by stocking up when a particular kind of feed appears to be low as compared with other feeds and in view of the present and probable conditions of supply and demand.

BLANKS USED FOR STUDY OF RETAIL FEED STORES

Prepared by the Department of Agricultural Economics and Farm Management, New York State College of Agriculture, cooperating with the Bureau of Agricultural Economics, United States Department of Agriculture.

Record no.....Date.....Fiscal year ends.....R. R. conn.....County.....

ORGANIZATION

Form of incorporation.....Date incorporated.....No. of stockholders or members 1918.....1919.....1920.....1921.....1922.....1923.....

MANAGEMENT

No. of directors.....Rate paid.....Days engaged.....How elected.....
Previous experience — manager.....
Is he a stockholder, director, or member?.....

BUSINESS CONDITIONS

Population of town.....Radius of territory.....+.....No. of comp. within 2 miles.....Amount of business in location.....
Type of farming.....Predominating nationality.....
.....Distance to large center.....No. of customers.....
Distance from siding.....From community center.....Milk station.....
Freight rate from Buffalo.....Transportation conditions.....

BUSINESS METHODS

Method of starting.....
Per cent of purchases, straight cars.....Per cent of mixed cars.....Buying done by.....
What shrinkage do you have to consider on bulk?.....
How do you handle your branch stores?.....
Sale price fixed (a) by market.....(b) cost plus.....Advertising policy.....
Do you undersell competitors?.....Patronage dividend.....
What per cent of business is delivered?.....Charges.....
Discount for cash off car.....out of whse. 100-lb. lots.....whse. ton lots.....credit whse. 100-lb. lots.....
credit whse. ton lots.....Percentage business spot cash.....Book accts.....Notes.....Book acct. settled by notes.....Percentage book accts. settled within 10 days.....10–30 days.....30–60 days.....2–6 mo.....over 6 mo.....
Term of notes.....No. of times renewed.....Are notes discounted at bank?.....Indorsed?.....
What per cent of customers fail to meet notes when due?.....
No. of uncollectible accounts per year.....Amt.....Charged off.....How is credit safeguarded?.....
Inventory cost or market.....
Chg. for grdg.....Chg. for mixing.....Amt. grdg. per year.....Amt. rec'd for grdg.....Sack acct.....

No.....

DETAILS OF MAN POWER

	Days work	Wage	% to feed	Age	Years serv.	Previous occupation	No. yrs. pre. occ.	G. S.	H. S.	B. S.	C.
Manager											
Stenog											
Bookkeeper											
Whse. man											
" "											
" "											
" "											
Del'y. man											

Hours open per day.....Time open.....Time close.....

If whse. man also del'y., % to del'y.....mgr. to office.....whse.....

SALES

	Cash	Credit	Total	% feed
Jan.				
Feb.				
Mar.				
Apr.				
May				
June				
July				
Aug.				
Sept.				
Oct.				
Nov.				
Dec.				
Total...				

VOLUME UNITS

	Cars	Amt. per car	Tons	Margin		% car-door
				Cash	Credit	
Corn						
Gluten						
Hominy						
Wheat						
Bran						
Std. midds						
Mix. feed						
Red Dog						
Oats						
Grd. oats						
Barley						
Buckwheat						
Oilmeal						
Cott. meal						
Beet pulp						
Dairy ration						

BALANCE SHEET No. .....

As of 19

	ASSETS					
1.	Cash bank					
2.	petty					
3.	Notes receivable					
4.	Less notes disc'd					
5.	Accts. receivable					
6.	Less reserve					
7.	Other notes receivable					
8.	Other accts. "					
9.	Merchandise inventory					
10.	Securities held					
11.	Accrued income					
12.	Def. chgs. to operation					
13.	insurance prepaid					
14.	advertising "					
15.	printing & supplies					
16.	rent prepaid					
17.	wages prepaid					
18.						
19.						
20.	Total current assets					
21.						
22.	Furniture & fixtures					
23.	Less reserve					
24.	Delivery equipment					
25.	Less reserve					
26.	Misc. equipment					
27.	Less reserve					
28.	Whse. equipment					
29.	Less reserve					
30.	Buildings					
31.	Less reserve					
32.	Land					
33.						
34.	Total fixed assets					
35.						
36.	Total assets					
	LIABILITIES					
37.	Accounts payable					
38.	Notes payable					
39.	Trade accept. payable					
40.	Accrued expenses					
41.	taxes due unpaid					
42.	wages " "					
43.	interest due unpaid					
44.	insurance " "					
45.	rent " "					
46.	Money deposits					
47.	Dividend payable					
48.						
49.						
50.	Total current lia					
51.						
52.	Mortgages					
53.	Cert. of indebtedness					
54.	Ded. for cert. not issued					
55.	Other fixed lia					
56.						
57.	Total fixed liabilities					
58.						
59.	Capital stock common					
60.	" preferred					
61.	Surplus					
62.						
63.	Net worth					
64.						
65.	Total liabilities					

STATEMENT OF BUSINESS No.....

FOR YEAR ENDING.....

1.	Sales						
2.	Sales ret. allow. & disc						
3.	Net sales						
4.	Inventory beg. of yr						
5.	Purchases during yr						
6.	In freight & cartage						
7.							
8.	Purchase ret. allow. disc						
9.	Inventory at end of yr						
10.							
11.							
12.	Officers' salaries						
13.	Manager's salary						
14.	Office salaries						
15.	Labor						
16.							
17.	Rent land						
18.	" whse						
19.	Depr. whse						
20.	equip						
21.	furn. & fixt						
22.	del'y. equip						
23.	Taxes corporation						
24.	land						
25.	buildings						
26.	equipment						
27.	personal						
28.	Repairs whse						
29.	equip						
30.	furn. & fixt						
31.	del'y. equip						
32.	Insurance plant						
33.	equipment						
34.	furn. & fixt						
35.	del'y. equip						
36.	merchandise						
37.	burglary						
38.	bond						
39.	emp. lia						
40.	Heat						
41.	Light						
42.	Water						
43.	Power						
44.	Tel. & tel						
45.	Auditing						
46.	Advertising						
47.	Office supplies						
48.	Legal & coll. exp						
49.	Organization exp						
50.	Losses — bad debts						
51.	Travel expenses						
52.	Demurrage						
53.	Delivery exp						
54.	Commissions						
55.	Other supplies						
56.	Licenses, feed						
57.	" del'y. equip						
58.	Int. on borr. money						
59.							
60.							
61.	Misc. income rent						
62.	grinding						
63.	commission						
64.	dues						
65.	int. income						
66.							

Year_____ RETAIL PRICES No._____

Cash 100-lb. lots Buffalo rate_____

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Ave.
Gluten														
Average														
Bran														
verage														
Mixed feed														
Average														
Oilmeal %														
Average														
Cottonseed meal %														
Average														
20% dairy ration														
Average														
24% dairy ration														
Average														
Mash														
Average														
Grd. oats														
Average														
Cornmeal														
Average														
Cr. corn														
Average														
Hominy														
Average														

PURCHASES — Include retail, trucked, and from farmers

Date purch.	Shipper	Goods bgt.	Price	Date inv.	Content pounds	Date rec'd.	Amt. frt. allowed	Amt. frt. paid	Date unloaded	Wgt. over	Wgt. short	Amt. of draft	Demurrage claims	% car-door

WAREHOUSE DATA No. . . . . .

Building	No. 1	No. 2	No. 3	No. 4	No. 5
1. Owned or rented					
2. Size					
3. Stories					
4. Construction					
5. Cost to build					
6. Present value					
7. Book value					
8. Rate annual depr					
9. Annual depr					
10.					
11. No. of bins					
12. Size of bins					
13. Total bulk cap					
14. Total sacked cap					
15. No. cars unloaded at once					
16. No. unloading doors					
17. Method of unloading					
18. Bulk					
19. Sacked					
20. Height platform					
21. No. feet switch					
22. No. ft. car-door switch					
23. No. delivery doors					
24. Height del. platform					
25. Mill in transit. priv					
26. Demurr. agree					
27. Repairs normal					
28. Repairs actual					
29.					
30. Value of switch					
31. Annual repairs, switch					
32.					
33.					
34.					
35. Water power					
36. Value flume & dam					
37. " water wheel					
38. Other water equip					
39. Annual depreciation					
40. " repairs					
41.					
42.					
43.					
44.					
45.					

WAREHOUSE EQUIPMENT No.....

Item	No. owned	Type & size	Capacity	Source power	Year bgt.	Useful life	Cost price	Present value	Junk value	Repairs	Annual depr.
Gas engine											
Electric motor											
" "											
" "											
Grinding mill											
Corn sheller											
Corn cracker											
Cr. corn separator											
" " grader											
" " & cob crusher											
Mixer											
Feed elevator											
Freight "											
Feed stacker											
Platform scale											
Portable scale											
Hand trucks											
Bag holders											
TOTAL											
		Description									
Office equipment											
Desk											
Chairs											
Typewriter											
Safe											
Adding machine											
Cash register											
Check protectograph											
McCaskey											
Std. file											
Mimeograph											
Stove											
TOTAL											